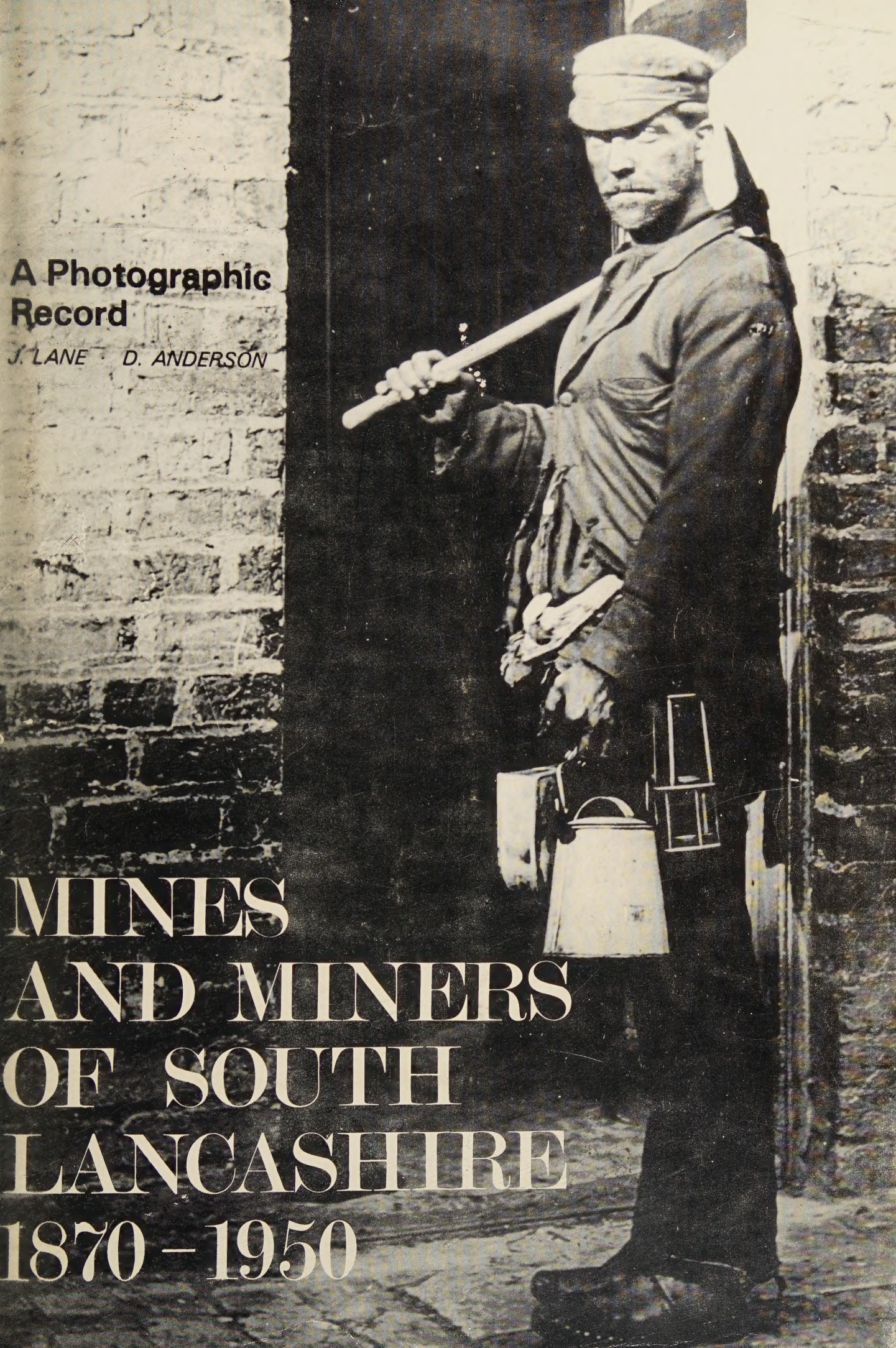

A Photographic Record

J. LANE D. ANDERSON

MINES AND MINERS OF SOUTH LANCASHIRE 1870–1950

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TO THE MEMORY OF 'JACK' LANE O.B.E. (1904 - 1978)
FORMERLY H.M. DIVISIONAL INSPECTOR OF MINES & QUARRIES FOR THE NORTH WEST
& CO-AUTHOR OF THIS BOOK

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FOREWORD BY MR. B. P. DONAGHY, MINERS AGENT & PRESIDENT, NORTH WESTERN AREA, NATIONAL UNION OF MINEWORKERS.

The Lancashire and Cheshire coalfield has had a long and chequered history. The areas worked stretched in a triangle from north of Burnley, down the side of the Pennines to Manchester and south into Cheshire, through central Lancashire to the boundaries of Liverpool in the west.

It is difficult for people today, especially the younger generation to appreciate the impact that coal mining had in the past. Within the area of the coalfield, scarcely a family was untouched in some way by coal, either in the production or the transport and distribution of the mineral.

Everybody, of course, burned coal, smoky chimneys were a common feature of the landscape. Coal and cotton were the basis of industrial Lancashire. The desire for a larger output of coal led to improved roads, the construction of canals and also steam railways.

Towns as far apart as Oldham and Skelmersdale had sizeable coalmining communities. The Lancashire and Cheshire miners were the first mining union to urge support for the foundation of the Labour Party. Many of our Miners' Agents became well known MP's, Tom Brown, Stephen Walsh, Joe Tinker and many more. Thomas Ashton, the Secretary of the Lancashire and Cheshire Miners became the first Secretary of the M.F.G.B. Other Lancastrians also achieved high office, J. Gormley, the President of the N.U.M. is a Lancastrian through and through. On the coal owners side, Sir Thomas Ratcliffe Ellis was the Secretary to the Coal Owners Association during its most turbulent years; he worked for a Wigan company. And so it goes on.

The Authors have produced more than just an illustrated history of coalmining in Lancashire. They have recreated an important piece of social history. Some of the memories stirred will be pleasant, some not so pleasant, of the "Good old days" when even a person lucky enough to be employed still faced a struggle for existence.

Pictures speak louder than words and so it is with this volume. I hope it brings pleasure to all who read it. I hope that it will be of sufficient interest to younger people to make them more inquisitive of coalmining history, and the legacy which they have inherited, and which those who have worked in the industry in any capacity will never forget.

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INTRODUCTION

The slow rise and rapid decline of the Mining Industry in Lancashire is a fascinating story of men's efforts to develop to the full the nation's wealth in the rich coalfield of the county over a period of 300 years. Coal was being mined in small quantities in many places where the seams were accessible near the surface during the fourteenth & fifteenth centuries. The discovery of rich Cannel coal & the high quality Orrell seams in the areas around Wigan created a profitable industry in the district from the sixteenth century onwards and many new mines were opened by the local land owners.

Seams of coal were discovered in various parts of the county and large numbers of small shallow shafts were sunk to the most easily worked seams. The mining was crude and the mines employed few men - a team of 3 or 4 men would mine the seam of coal until the excavation became unsafe. However, by the end of the sixteenth century a proper system of mining had evolved in Lancashire using 'Sough' drainage with narrow level water roads driven from the point where the sough intersected the seam. Shafts for winding & ventilation were sunk slightly to the rise side of the water road & the whole area to the rise was cut out into pillars by narrow roads. As the workings proceeded towards the crop further shafts were sunk to facilitate coal winding & ventilation.

With the expansion of the collieries and the working of deeper seams, the number of persons employed in them increased rapidly, bringing many hardships for the people so employed and a heavy loss of life by accidents in and about the mines. The public conscience was awakened to the appalling conditions in the mines after a series of explosions in which large numbers were killed. Local people formed committees to try to improve the lot of the mining communities and the matter was raised in Parliament by Members representing mining constituencies, notably Edward Pease of Durham.

Opposition to any 'interference' by the Government in private industry was strong, but as the mining disasters continued, the demand for action became widespread. In 1842 a Bill presented to Parliament by Lord Ashley, was passed which prohibited the employment of girls and women underground & boys below the age of 10.

In the late eighteenth century the output of coal grew rapidly due to the development of steam machinery and the demands of industry generally. In 1858 there were 380 coal mines in the County of Lancashire and they produced 8,000,000 tons during the year; by 1874 the number of mines had increased by 178 to a total of 558 and the output of coal had doubled to approximately 16,000,000 tons. The amount of coal mined in the county continued to increase until 1907 when a total tonnage of 26,000,000 was extracted from 358 mines - almost 10% of the total quantity mined in the whole country.

This increase in the output of coal was to some extent the result of using machines to cut the coal - a development in mining techniques introduced and fostered by the mining engineers and coal owners of the county. In about the year 1866 the coal owners of South Lancashire offered the sum of £500 for the best design of a coal cutting machine capable of cutting the coal seams of Lancashire. An engineer, Mr. J. Scarisbrick Walker, submitted a design and obtained a Provisional Patent for it, before finding that his design had been anticipated some 20 years previous; consequently no award was made, although the earlier design, seen at an exhibition, was to be worked by hand. Mr. Walker's compressed air disc machine was constructed with two small cylinders to provide the motive power and tested in a coal mine near Wigan with promising results. After improvements, it was installed at Thomas Gidlow's Ladies Lane Colliery at Hindley near Wigan and proved to be a success. The machine was seen by H.M. Inspector of Mines for the area, in November 1869 and approved by him. This was the beginning of mechanised mining in Lancashire and probably one of the first successful power-driven coal cutting machines in the country.

The coal mined during the eighteenth and nineteenth centuries was extracted from the seams of high quality coal having such geological conditions that they were easily mined. Good coal seams having good mining conditions provided good profits. The intensity of extraction which had been achieved over the period 1860 - 1920, in such seams from the small Lancashire Coalfield, caused them to become exhausted during the ten years 1920 -1930. Unavoidably, the more inferior seams which had been developed had to be worked more intensively resulting in the market value of the product being reduced accordingly. Lancashire coal no longer had the quality which for many years had ensured consistent demand at such a good selling price that mine owners were assured of handsome profits. With the exhaustion of the most valuable coal seams at depths of about 2,500 feet, mine shafts were deepened to locate good seams at lower horizons, until mining in the 1920 -30 decade was being carried out at depths of 4,500 feet.

Dust and very high temperatures made mining difficult beyond normal human effort and in many instances men were unable to attend regularly at the mine; production costs were seriously increased and the profit margins were further reduced.

The combination of heat and dust in the deeper workings of mines in Central Lancashire in the 1930 to 1950 period created for the colliers working conditions which were probably without parallel in any other mines in the country at that time. Salt tablets were supplied to the men to replace that lost by excessive perspiration when at work. Losses in body weight up to 12 pounds in 8 hours by men in the deeper parts of mines were recorded.

The financial difficulties which followed, caused the closure of a number of mines in Lancashire and the need for a drastic reorganisation of those still in production became obvious. The Nationalisation of the coal mines of the country in January 1947, made available the required capital and the beginning of a programme of mechanisation which made possible the production of more coal, without increasing the number of persons employed.

The outlook for the mining industry in Lancashire appeared to be good and there were 86 collieries in production; 20 of these were in the Manchester area, 26 in the Wigan area, 22 in the St. Helens area and 18 in the Burnley area; 74 were taken over by the National Coal Board and the remainder were privately owned.

During the 1955 to 1965 period the demand for coal fell throughout the country, Those mines having a poor quality product could not dispose of their coal and many of them were operating at a serious loss. A policy of concentration on the profitable mines was apparently decided upon throughout the industry and this was the beginning of the end of coal mining in Lancashire. Many of the seams being worked contained thick bands of shale or stone which could not be separated from the coal as it was being mined, and because of this, the machines cutting and loading the seams were dealing with mineral which was (in some instances) a mixture of 40 per cent stone and 60 per cent coal. To prepare such a mixture to a condition fit for sale it must be washed or cleaned to remove the small pieces of shale and stone dust. The final result of such a cleaning process was that no more than 60 or 65 per cent of the mineral wound from the mine would be a marketable product. Skilful grading of the best coal with the most inferior did much to produce a fuel suitable for use in various industries, but as coal of superior quality was available from other coalfields the Lancashire mines rapidly became uneconomic.

The efforts of both management and men to keep the industry viable locally, is reflected in the records of the number of working coal mines and the annual output of coal obtained from them over the years. At the turn of the century no fewer than 400 coal mines were working in Lancashire, and in 1907 the number of tons of coal raised reached a record of 26,184,033. As the best quality seams became exhausted the number of mines operating was slowly reduced, but the output of coal did not fall proportionately owing to the introduction of more machines, making possible the concentration of mining effort. In the following table the effect of the deterioration of the quality of the marketable product can be seen between the years 1925-1945 followed by a temporary improvement in output after the nationalisation of the mines in January 1947 until the serious reduction in the demand for coal about 1960.

TABLE 1 - Coal Output and Mines Working in Lancashire

Year	Tonnage	No. of Mines	Year	Tonnage	No. of Mines
1907	26,184,033	358	1963	10,932,800	33
1910	23,417,913	356	1964	9,719,517	31
1920	18,784,699	240	1965	9,624,968	27
1925	17,220,469	215	1966	9,060,606	24
1930	14,905,273	189	1967	7,618,255	21
1935	14,089,595	156	1968	7,336,681	19
1940	13,617,300	150	1969	6,124,282	13
1945	10,797,300	117	1970	5,572,249	12
1950	12,271,927	80	1971	4,860,377	11
1955	13,012,646	59	1972	3,371,213	9
1960	10,978,671	48	1973	4,443,395	9
1961	9,836,341	43	1974	3,267,609	9
1962	10,394,000	38	1975	4,245,607	9

The growth of the Mining Industry in Great Britain has been well documented in various Government reports since the appointment of H.M. Inspectors of Mines in November 1850, and conditions in mines have been controlled by the steady increase of mining legislation. It was unfortunate that a similar measure of control was not imposed on the mine owners to restrict the manner in which mines were established and closed. Only a small number of colliery owners concerned themselves with the preservation of the countryside during the working and after the closure of their mines. The excavation of thousands of mine shafts and the formation of unsightly pit heaps, the building of large chimneys and engine houses and the laying of many miles of railway track created ugly, and now abandoned landscapes which will take many years and much effort to reclaim. Credit should be given to the National Coal Board for the work already done in landscaping old colliery sites in Lancashire. Pit heaps have been levelled or contoured, old buildings have been demolished and removed, railway sidings have been cleared and levelled, and a large number of old mine shafts have been filled in. Valuable land has been recovered for use as either sites for light industry or for housing.

The mining of coal in large quantities in localities adjacent to mills, foundries, iron works and manufacturing towns made Lancashire one of Britains' most important industrial centres. Many books have been written about the miners, the cotton mills and the industrial environments of the county, but our mining history records are sadly lacking in pictorial material. The authors, both mining engineers, trained and employed in Lancashire have tried in some small measure to remedy this omission. Unfortunately it is impossible to do full justice to the subject owing to there being very few photographs available of the mining conditions in and about the mines of the 19th century. Those included in the following pages have been chosen to cover as wide a field as possible, at the same time keeping their presentation free from obscure and unnecessary technicalities.

THE BEGINNING AND END OF A MINERS' WORKING DAY

An important feature in the work of a coal miner not fully understood by the layman is the fact that no underground worker can be late for work at the mine. Workers employed in surface establishments travel from their homes to the factories or offices and are at their actual place of work a few minutes after entering the premises. Large numbers of people can arrive and be in operation in a short period of time.

When underground workers arrive at the mine they must obtain their safety lamps and record their presence before walking to the shaft to be lowered by cages into the mine. Pit cages hold a limited number of men - at a small colliery it could be four men per cage and at a large colliery 100 men per cage; whatever the number per cage it means that men can only enter the mine at a limited rate. A period of time - known as "the men riding time" is set aside at each colliery to lower men into the mine, at the same time bringing out the men who have completed their shift. As the men leave the cage at the bottom of the shaft they again record their presence to the official in charge of their section of the mine, and begin the journey to their places of work. Colliers working at the coal face are usually the men who have to travel the greatest distance from the bottom of the shaft and prior to the 1940's this meant a walk of 1 to 2 miles along roadways which were inclined and often too low for a man to walk upright. Such a journey would probably take about 20 to 40 minutes. Since the mines were nationalised (1st January 1947) the National Coal Board policy has been to provide manriding trains to convey men into the workings and as a result men arrive at their working places in a better physical condition.

The "men riding times" at the shafts varied at different pits but were statutory for a particular mine having been fixed by the manager and posted to inform all underground workers of the times relevant to all shifts. Such times could not be varied except in case of an emergency and then only by the permission of the senior official on duty. To extend the official time established for winding the men, would curtail the time available for the production of coal; the operation of the machinery for transporting coal below ground is geared to the rate at which coal can be raised up the shafts.

Miners working at the Lancashire collieries of 60 years ago knew that they would not be allowed underground if they were delayed during the journey from their homes to the pits - a tram breakdown meant a return home and the loss of a day's work.

An example of the timetable of a working day in the life of a coal miner in the Wigan district of Lancashire during the decade 1920-30 may be of interest.

He would probably rise from his bed about 5.20 a.m. and have breakfast from 5.25 a.m. to 5.40 a.m. (his wife would have risen before him and prepared his breakfast and his sandwiches to take to the mine).
From 5.45 a.m. to 6.10 a.m. he would travel by public transport (electric trams) to the stopping place nearest to his colliery; 6.10 a.m. to 6.30 a.m. - he walked to the mine, checked at the lamproom and collected his safety lamp. At 6.30 a.m. he was expected to reach the pit shaft and by 6.40 to be in the mine reporting his presence to his official in charge. From 6.45 he would begin his journey into the mine workings to his place of work, the time of his arrival at that place depending upon the nature of the journey, distance, gradient, height of the roadways and temperature. The working shift would end about 2.00 p.m., giving him 30 minutes to leave his working place, recover his clothes and make the return journey to the shaft bottom where he would wait, along with many other men from different parts of the mine, for his turn to be raised to the surface.

On the surface he returned his safety lamp to the lamproom and collected his "check" (a numbered disc), this recording his return from underground. Assuming his walk back to the trams would be three quarters of a mile, he would probably board a tram about 3.15 p.m. and arrive home at about 3.45 to 4.00 p.m. His last meal would have been sandwiches and cold tea in the mine about 11.00 or 11.30 a.m. On arrival home his principal meal of the day was ready.

By the 1960's the picture was a different one - pit head baths were provided at all the collieries operated by the National Coal Board. The underground workers did not travel to the mine in their working clothes, but changed into them in the warm atmosphere of the baths changing room. The walk from the baths to the pit bank (top of the shaft) was along a covered walkway;— in earlier years men were exposed to the weather. Canteens were attached to the pithead baths and, (time permitting), men could get hot drinks and light refreshments before going below ground. In many collieries provision was made for the men to ride on small trains from the junctions at the bottom of the shaft to stations near their place of work.

Miners using public transport from their home locations to the collieries were taken to pits in buses and a large number of men came in their own cars. It was usual for men who owned a car to make arrangements with others who lived in the same locality to share the cost of the petrol.

Photograph No. 1

Abram Colliery Nos. 4 & 5 pits in 1911.

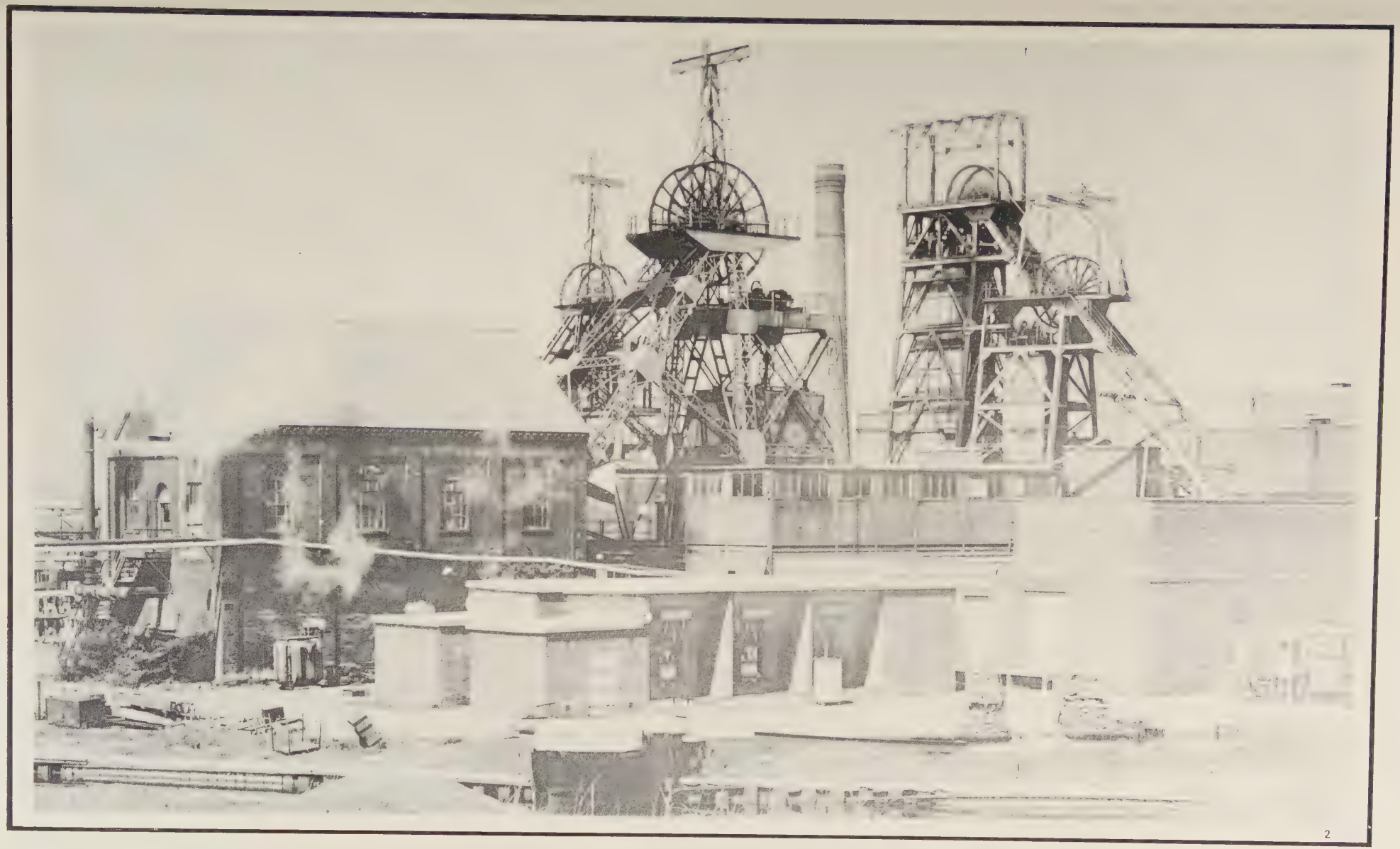
The group in the picture consists of one of the undermanagers of the mine, William Lane and his three sons, the youngest of whom, John Lane, O.B.E. co-author of this book, became Divisional Inspector of Mines of the North Western Division in 1966. Two well constructed headgears are shown, one of wood construction over No. 4 Pit and the other of steel lattice framework at No. 5 Pit.

These shafts were sunk in 1875-78 to work the deep Haigh Yard and Arley Seams, the shallower Wigan series of seams being worked from the Nos. 1 & 2 Pits with No. 3 Pit acting as the Fan Shaft. No. 4 was 638 yards to the Arley, and No. 5, 650 yards to the same seam. A very large Guibal Fan, 46 feet diameter, with blades 16 feet wide, was erected by Walker Bros. of Wigan at No. 4 Pit, being driven by duplicate engines. The air casing in this headgear was destroyed on Dec. 19th 1881, when 48 men lost their lives in an explosion in the Yard Mine. No. 5 Pit, the main winding pit, was equipped with a magnificent winding engine, built by Daglish of St. Helens Foundry. The two cylinders were 40 in dia. with a 7 foot stroke and the drum was 24 ft. diameter. It was one of the largest winding engines in the country at that time and created considerable interest in engineering circles.

The engine at No. 4 Pit, built by Walker Bros. of Wigan, was slightly smaller than that at No. 5 Pit, having an 18 foot diameter drum and two cylinders 32in x 6ft. A large surface plant consisted, besides the above, of compressors, screens, eleven Lancashire boilers, large well equipped wagon shops where they built and repaired their own wagons, fitting shops, smithy, carpenters shops etc. The colliery was first opened in about 1840 by Ackers & Whitley, Abraham Ackers being the more active partner.

Ackers died in 1864 and soon afterwards there was a reorganisation of the company, resulting in them surrendering the leases of the deeper seams under the Westleigh House, Bolton House and Bickershaw Hall estates and concentrating on sinking a new colliery at Plank Lane, Leigh. A new partnership of William Hayes & James Henry Johnson leased the surrendered seams and sank five pits. Hayes seems to have been related to the Whitleys. Abram collieries closed in 1933, the managing director at that time being Major E. Hart, whose father, Augustus Hart, had risen in the firm from being office boy to Secretary & Managing Director.

The colliery was in decline from 1914 when 387,294 tons were raised. By 1927 production was down to 273,021 tons, when close on 1800 men were employed.



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Photograph No. 2: Soon after the closure of Abram, Major Hart became Managing Director of Ackers Whitley & Co's Bickershaw Colliery where he initiated a major re-construction scheme. Nos. 3 & 4 shafts were deepened to 750 yards to work virgin seams, an automatic electric skip winder being installed in No. 4 shaft capable of winding over 3000 tons per shift.

A reconstructed boiler plant, additional power plant and a new dry cleaner were also installed. This colliery is now one of the National Coal Boards major production units in the North West (Western Area).

Photographs Nos. 3, 4, 5, 6, 7 & 8
Pemberton Colliery, Wigan.

Photographs Nos. 3, 4 & 5,
are general views of the colliery.

A very large colliery owned by the Blundell family employing 3000 men during the early part of this century. The first pits were sunk in 1815-20 and equipped with a large Cornish pumping engine with an 84" diameter cylinder. These pits were 130 yds. deep to the Pemberton 4ft. seam. Fifty years later two 18ft. diameter shafts, the King and Queen Pits, were sunk 633 yards to the Orrell 4ft seam and in 1900 a third deep pit, Prince Pit was sunk to act as the main upcast. These pits were equipped with the best and latest machinery of the time.

In its hey day the colliery produced close on a million tons a year and in all, 15 seams were worked. They owned nearly 2000 railway wagons,some of which were built in the colliery wagon shops, six locomotives, one of which was built in the colliery workshops; there were 17 miles of sidings, 14 blacksmiths hearths in the smithy 36 steam boilers and upwards of 250 ponies stabled underground. The company also operated a large coke & by-product works and a brick & tile works, all on the colliery premises. The head office was in Liverpool and there were many coal yards and depots in various towns.

Photograph No. 6 — The battery of Semet—Solvay ovens with the Benzol House in the background

Photograph No. 7 is of the tar and benzol plant with loco 'Blundell'' pushing an ammonia tank to the by-product works.

Photograph No. 8 The extensive batteries of beehive ovens in the 1890's.

Photograph No. 9 - The No. 5, New, or Basket Pit at Winstanley Colliery.

Sunk by Meyrick Bankes of Winstanley Hall in 1856, 262 yards deep to the Orrell 4ft seam, it was lined for 44 yards from the surface with cast iron tubbing, through a thick bed of gravel. Up to 1873 all the five pits at Winstanley wound baskets, but a scathing letter from the Inspector of Mines made them change over to cages and tubs in all the pits except the No. 5. It still wound baskets in 1880 when the photograph was taken. Men rode down three in a basket, each with one foot in the basket and the other dangling outside.

The Inspector wrote:-

'You will be getting someone thrown out and killed, and I cannot see what there is to save you from manslaughter, especially when the place will warrant you putting in boxes (tubs) and proper cages & slides'.

The seams worked were the very best;- the famous Orrell 4ft (Arley Mine) and Orrell 5ft seams, the colliers riddling the coal underground, stowing the slack and sending up only large coal. However a quantity of slack was used for burning coke in the beehive coke ovens at No's. 1 & 2 Pits and this amounted to 60 or 70 tons a day, and probably came from the latter pits.

The Lancashire & Yorkshire Railway Company was supplied with coke from these ovens for firing their locomotive boilers, coke causing less polution than coal.

It will be noticed that the pit brow was only slightly higher than the top of the wagons, which are small 4ft gauge, 5 ton capacity wagons, used on the incline to Wigan Pier. The coal was so superior in quality that no cleaning was required, the baskets being tipped directly into the wagons.

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Photographs 10 & 11. Basket pits at Pemberton House (Barkers') Colliery at Heskin near Chorley and at Hic Bibi or Coppull Colliery, north of Wigan.


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Photograph No. 12
Ladies Lane Colliery, Hindley near Wigan.

Photograph No. 13
The No. 3 Caroline or Deep Pit
at Rose Bridge Colliery, Ince near Wigan.

Photograph No. 12 - This photograph illustrates the great change that occurred during the early and middle parts of the 19th century in former rural areas such as Ince, Hindley and Ashton, where there were ancient half timbered and moated halls, farmsteads and thatched cottages.

Ladies Lane Colliery was sunk by Thos. Gidlow in 1857 and taken over by the Wigan Coal & Iron Coy in 1878. There were four pits numbered 1, 2, 3 & 4. The seams worked were the Cannel, King, Yard & Arley. 280 men were employed underground and 60 on the surface in the 1890's. A small area of the Ravine Seam was worked up to 1874 and then given up. A severe depression in the coal trade began in that year and since the Ravine was of poor quality there would be no sale for it. Very little King Coal was worked also as thin bottom coal and a very thick dirt band made it unprofitable.

The Arley seam was the most profitable being 4ft thick and of good quality. The Haigh Yard seam was only 2ft 4ins. thick.

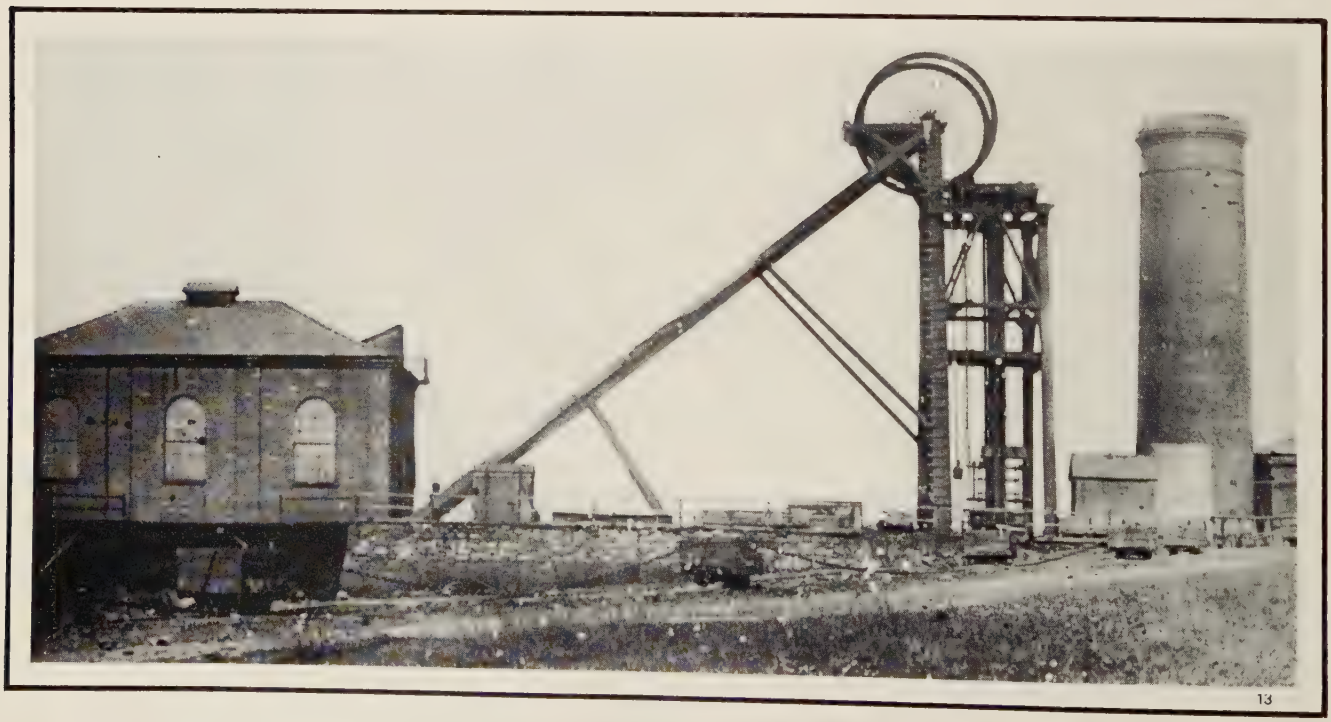
Wigan Coal & Iron Coy's workings in these two seams were continuous and connected, from Haigh through Aspull and Hindley to Westhoughton.

Close to Ladies Lane pits were the Hindley Deep & Pennygate Pits, the latter being an important pumping pit for the company.

Photograph No. 13 - The No. 3 Caroline or Deep Pit at Rose Bridge Colliery, Ince near Wigan. This pit, when it was sunk in 1869 was the deepest in Britain at 815 yards, the strata temperature at that depth being 94°F. Previously Nos. 1 & 2 or West & East Caroline Pits were sunk in 1854 to the Pemberton 4ft seam at 295 yards. A few yards away from the East Caroline Pit a staple or blind pit was sunk in 1858 to the Cannel seam at a depth of 296 yards.

An excavation was made over the top of this shaft in the roof of the Pemberton 4ft seam and a headframe, pulleys, & winding engine erected to wind from the Cannel to the Pemberton 4ft, where the tubs were transferred from the Staple pit cage to the East Caroline pit cage and wound to the surface.

In 1869 it was decided to sink No. 3 Caroline or Deep Pit to the Arley Mine & wind directly from that seam. The speed of the cage in this shaft was once recorded at 5,100 ft. per minute or 57 miles an hour:- as fast as the express trains of that period.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Photograph No. 14

John Pit, owned originally by John Taylor then by the Standish & Shevington Cannel Company and after 1865 by the Wigan Coal & Iron Co. Ltd., was situated at Standish Lower Ground about two miles west of Wigan. The mine was opened in 1836 but was never a large unit, employing 160 persons in 1895, 280 in 1912, 210 in 1928 and 316 in 1945. It was closed by the National Coal Board in May 1954; the underground roadways were merged with the new Standish Hall Drift.

The photograph shows the old wooden headframes of the kind used in the Wigan coalfield for more than 100 years, with the winding engine between the two shafts. The system of winding the coal to the surface was by having one cage in each shaft with the winding ropes to the one engine; one cage ascending as the other was descending. The wire ropes in the shafts at the time the photograph was taken, were of a flat construction about 3½ inches wide and ½ inch thick. These are clearly seen in Photograph 15.

The short square chimney in the left foreground of the picture was originally built as an underground furnace chimney to ventilate the mine, probably about 1836; this system of ventilation was replaced by suction fans many years ago.

Photograph No. 15

This is an excellent picture of the old time flat winding ropes which were used at the John Colliery owned by the Wigan Coal & Iron Co. Ltd. The photograph shows that there is about the same amount of rope on each reel drum and this indicates that the two cages are about the mid position in the shafts. At the end of a wind one rope reel (cage at the surface) would have a large diameter and the other (cage at the bottom) would have a small diameter. Such an arrangement gave a definite mechanical advantage at the beginning of a wind when raising a loaded cage from the shaft bottom. The spokes known as 'venticals' secured to the sides of the reels prevented any slip of the flat rope.

Photograph No. 16

Prospect Pits at Standish near Wigan towards the end of the last century.

These pits, sunk in 1854, to work the famous Wigan Cannel seam, were 11 ft. in diameter & deepened to the Arley Mine at 390½ yards some years after they were sunk. They were worked originally by the Standish & Shevington Cannel Company, the managing partner of which was John Lancaster, a great Victorian entrepreneur; who besides opening collieries in Lancashire, Nottinghamshire and South Wales, founded or reorganised iron and steel works at Kirkless, Shelton, Lilleshall in Shropshire, Lesmahagow in Lanarkshire and Ebbw Vale in South Wales. The Standish and Shevington Cannel Company became in 1865 a constituent part of the Wigan Coal & Iron Company Ltd., one of the largest joint stock companies in Britain at that time, apart from the railway companies.

The winding engine at Prospect pits was of the vertical type, built by Nasmyth Wilson of Patricroft, Manchester. It had two cylinders, 24in diameter and a stroke of 5ft. The two shafts were fitted up for one cage only in each, the engine being placed between, so that the top rope and bottom rope went out in opposite directions, the cage in the upcast shaft acting as a balance weight and for inspection & repairs to the shaft.

Again the ventilation furnace chimney is a prominent feature near the upcast shaft, a short drift connecting the bottom of the chimney to the shaft, as was almost always the case. Good wooden pit brow & screen buildings keep the workpeople out of the weather. The locomotive is an 0-6-0 with 16" cylinders, of the type built to a design similar to those of the London & North Western Railway at the Kirkless workshops of the Wigan Coal & Iron Company. It is drawing wagons loaded with what appears to be cannel from underneath the screens.

A fixed bar screen, with movable loading chute, is seen on the left and women are in the wagons making a final check that the product is clean.

The wagons are of the old dead buffer type with a capacity probably of 8 tons. What may be the surface foreman is in the cab of the loco along with the driver and fireman, the two important looking gentlemen are probably the manager and mechanical engineer of the Standish group of collieries, Mr. John Dean being manager at the time the photograph was taken.

Photograph No. 17

Alexandra Pit and Lindsay No. 3 Pit at Whelley, Wigan, earlier this century

Photograph No. 18

Nos. 1 & 2 Crawford Pits at Aspull Moor in about 1900.

The sinking of Lindsay No's 1, 2 & 3 Pits was begun in 1856 by William Peace, Colliery Agent to the Earl of Crawford & Balcarres of Haigh Hall.

For many years the group of collieries worked by the Earl had been one of the most important in Lancashire. By 1860, the 12ft diameter Lindsay Pits had reached the Cannel Mine at 565 yards and a large field of coal was opened up. In 1873 it was decided to sink a further Pit which was named Alexandra Pit in commemoration of the visit of the Prince of Wales & Princess Alexandra to Haigh Hall in that year. This pit, 19 feet in diameter, was sunk first of all to the Pemberton 4ft Seam at 260 yards. Later it was decided to sink it down to the Arley Mine but this was cut off by the Great Haigh Fault and a tunnel was driven to it from a depth of 779 yards in the shaft. No. 1 Lindsay Pit was also stripped to 16ft diameter and sunk to the Arley as upcast for Alexandra, a furnace being installed in that seam.

The pit brow and screen buildings are of wood construction, the standard system up to the 1st World War. The headframe over the Alexandra Pit, on the left hand side of the photograph, is of very massive construction of pitchpine baulks because of the great depth of the pit and the weight suspended from it amounting to 72 tons. The eight weighted guide rods alone weighed 56 tons. At the turn of the century about 800 tons of coal per shift were wound by a large engine built by J. & W. Yates of Blackburn with two 36in by 78in cylinders and a winding drum 18ft diameter. The pit closed in 1955 but the surface buildings were used, for eight years from 1954, in conjunction with the working of Dairy Pit. The locomotive in the picture is another 0-6-0 saddle tank built by the company in their Kirkless workshops.

Photograph 18 - No's 1 & 2 Crawford Pits at Aspull Moor in 1900, sunk by the Earl of Balcarres fifty years earlier. The high engine house contained two vertical winding engines, built at Haigh. Like most other Wigan Coal & Iron Company pits at this time, the surface layout was very neat, The seams worked were, the Cannel at 88yds, The King Coal at 110yds, the Haigh Yard at 186yds, the Bone at 223yds and the Arley at 318yds in No. 2 Pit. No. 1 was only sunk to the Bone, another pit, Dairy, acting as upcast for the Arley. The pit closed in the 1920's.

19

Photographs Nos. 19, 20 & 21 Standish Hall Drift Mine.

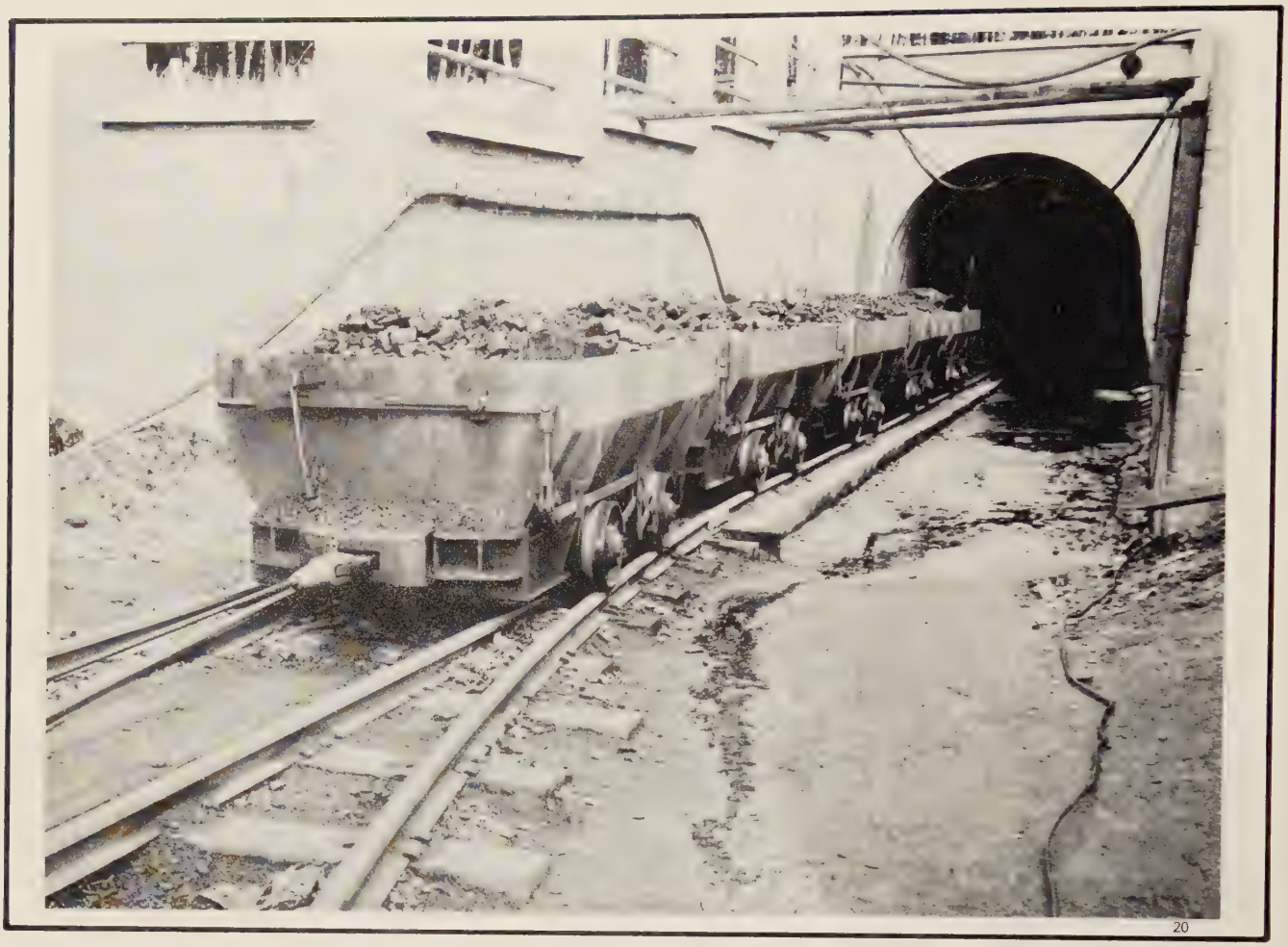
It was the policy of the National Coal Board soon after the Nationalisation of the mines, to open out drift mines to work comparatively small and shallow areas of coal not large enough for a major colliery.

Photograph No. 19 shows N.C.B. officials in 1948 examining the site in Elnup Wood, Standish, for the proposed Standish Hall Drift Mine.

After a boring programme had proved the Ince 4ft and Ince 7ft seams to be of workable thickness, it was decided to put two drifts down to these seams. Underground drivage commenced on 6th December, 1948. By the end of 1949 work was almost complete on the screens, underground loading station (for loading the mine cars with coal from the faces which was delivered by belt conveyors) and 150 HP surface hauler to haul the mine cars up the drift to the screen belt elevator, which delivered the coal on to the screens.

Photograph No. 20 Loaded mine cars being hauled up the drift by the surface hauler giving a good impression of the well constructed portal of the drift mine. By and large this drift mine was successful but the workings in the Ince 7ft seam were very wet. The output per manshift varied between 23 cwts and 30 cwts. From the end of 1947 to the end of 1960 the pit made an overall profit of £80,000. All the coal was worked out by July 1961 and the mine was then closed.

Photograph No. 21 The shunt at the top of the drift showing the empty train ready for going underground and the full train being pushed by a diesel locomotive towards the screening plant.



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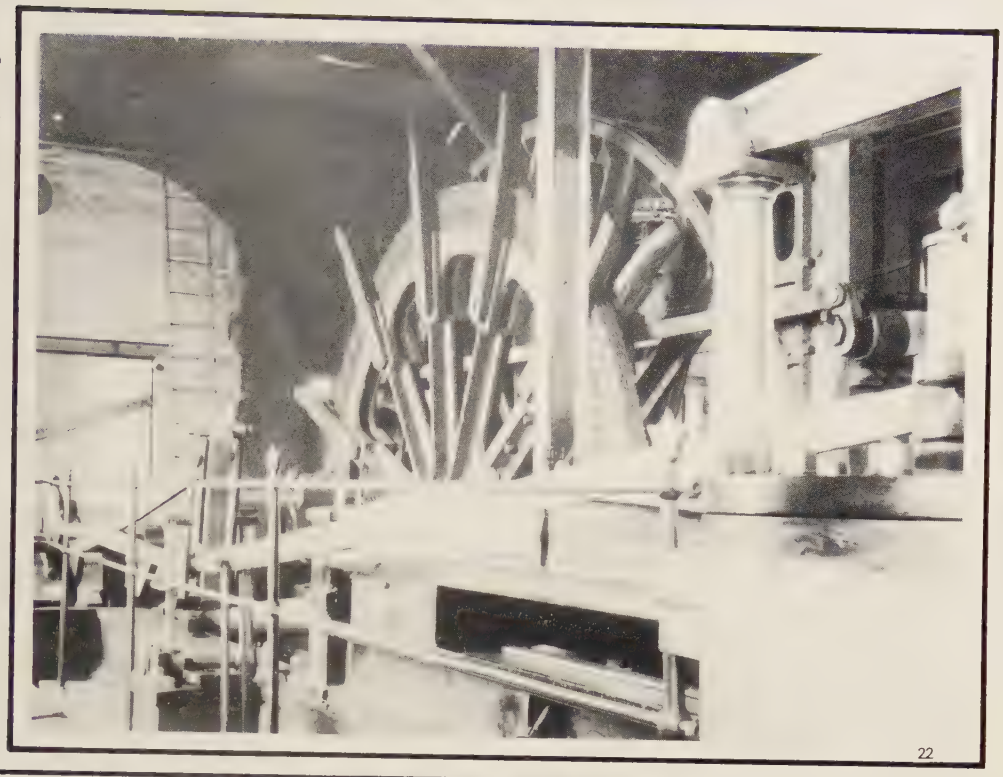
21

Photographs Nos. 22 & 23

Giants Hall Colliery
No. 3 Pit winding engine.



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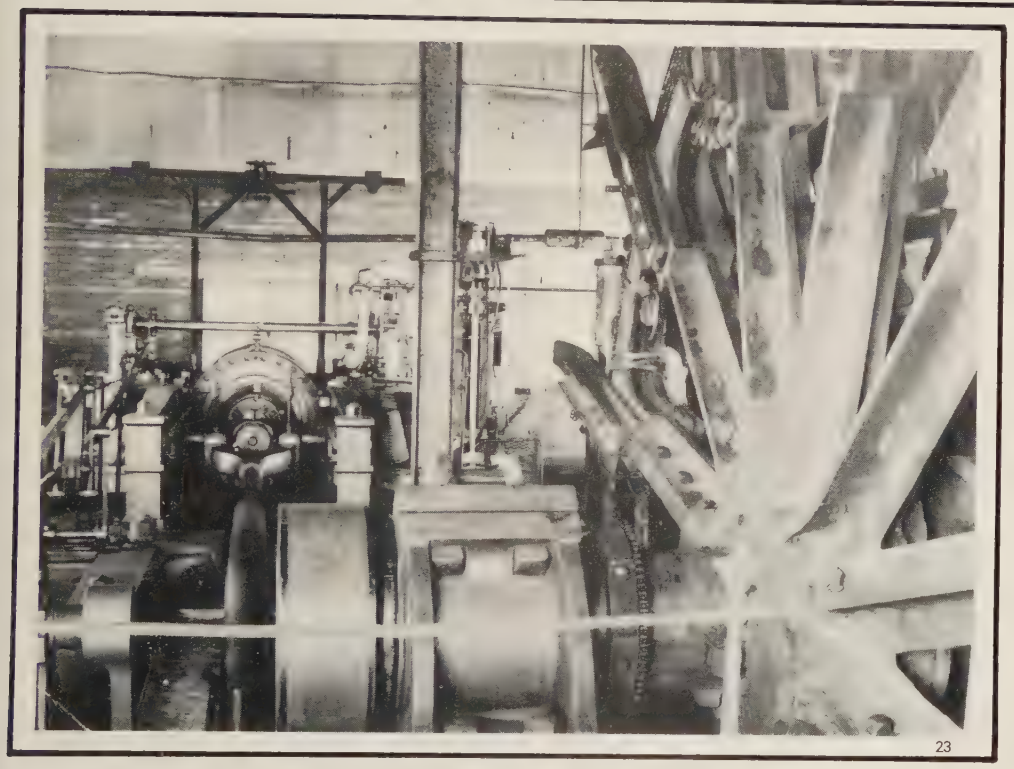
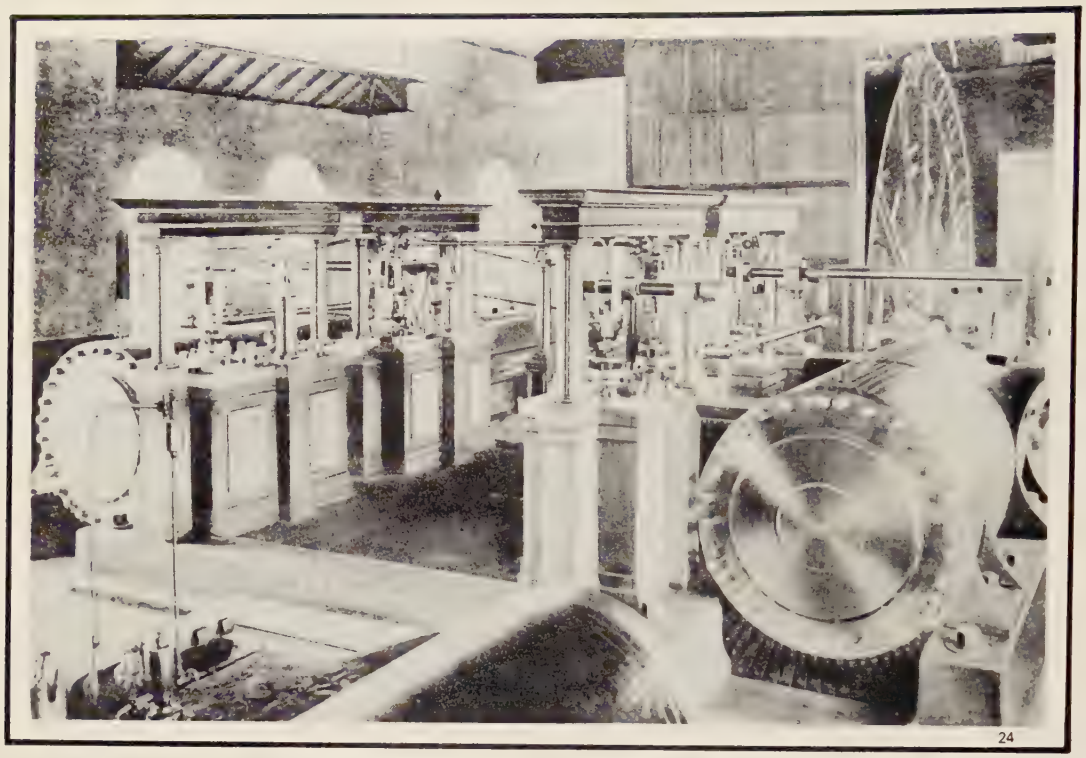


23

This colliery, at Standish near Wigan was sunk originally to the Ince seams towards the end of the 18th century. It was one of the collieries absorbed by the Wigan Coal & Iron Coy at its formation in 1865 and in 1875 they decided to sink two deep pits to work the whole series of seams available down to the Arley Mine at 606 yds. Due to trade depression, sinking was suspended for a time and finally completed in 1880. A pair of large winding engines built by Haigh Foundry Coy were installed, the cylinders were 36" bore and 78" stroke. Cornish valves were fitted, with two steam inlets on the inner and two exhausts on the outer side of the cylinders. The valve actuating and reversing mechanism was of the Gooch type and driven by a drag crank from the crankpin. The bedplates were of the usual "H" type of the period. The two reel drums, 15ft diameter, were of cast iron in halves and bolted together, they had timber horns bolted on to the centre wheel or spider and the 4 inch wide flat rope coiled upon itself between them. Midway between the two reel drums, a large brake wheel 20 ft 6 inches diameter was positioned and upon this a foot operated semi band brake operated. At a later date the semi band brake was superseded by post brakes and a brake cylinder. All the foregoing were of the splendid design and workmanship which placed Haigh Foundry in the forefront of engine builders of the time.



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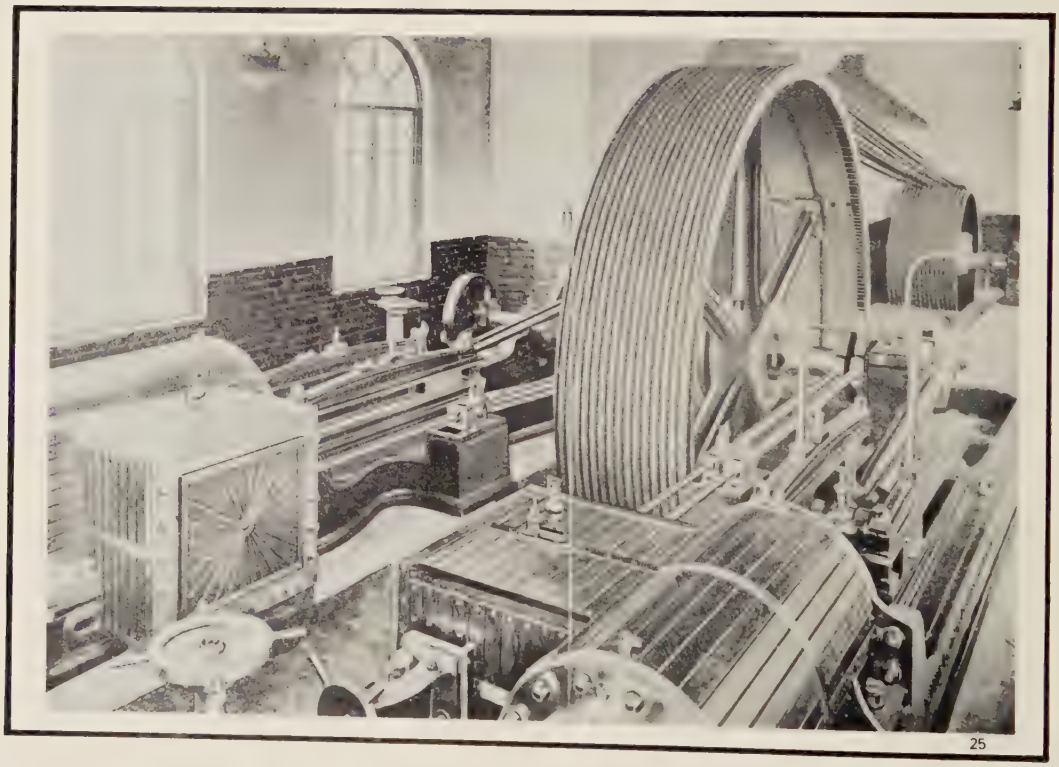


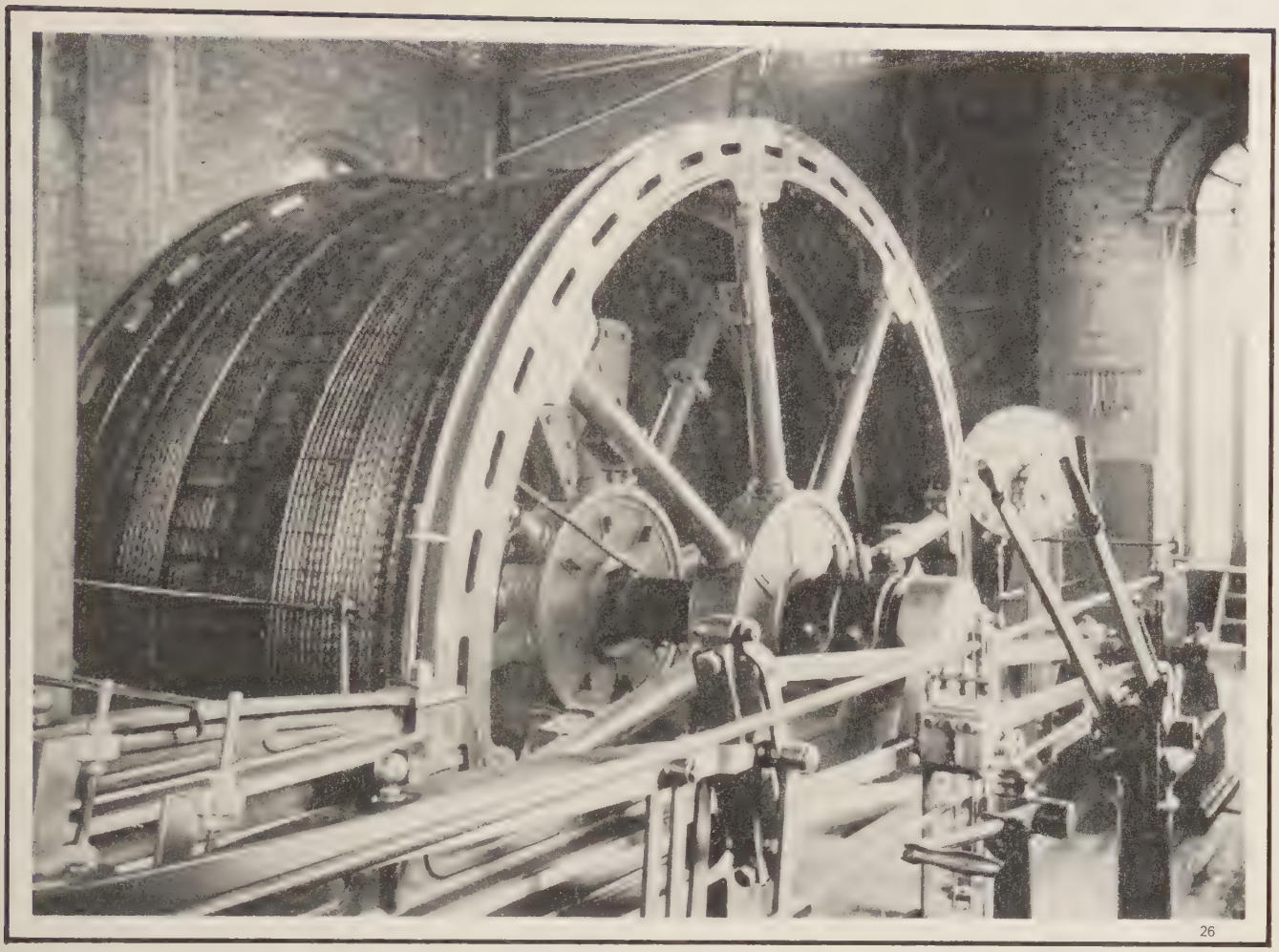
25

Photograph No. 24 — Garswood Hall Colliery No. 7 Pit Ashton-in-Makerfield near Wigan.

This Photograph shows the magnificent winding engines at this pit built by Walker Bros. of Pagefield Iron-works, Wigan. The cylinders were 40 inches diameter and the stroke 6 feet. The valves were on the Cornish principle operated by eccentrics fixed on trail shafts and the drum was 25 feet diameter. Both a steam and foot brake were provided, the steam pressure being 100 lb per square inch.

Photograph No. 25 — The fan engine at Garswood Hall Colliery, Wigan.

This was a twin compound engine, cylinder diameters 26 & 48 inches, 5 feet stroke, slide valves and Meyers expansion valves and steam at 100 lb per square inch. The rope pulley fly wheel at the engine was 28 tons in weight and 24 ft diameter grooved for 18 cotton ropes 1¾ inch diameter which connected it with the rope pulley (11 feet diameter) on the fan shaft. The fan, of the Walker Indestructible type, 30 feet diameter and 9 feet wide passed a volume of 500,000. cubic feet per minute, at a water guage of 6 inches.



Photograph No. 26
Blundell's King Pit Pemberton Colliery

These magnificent winding engines built at Haigh Foundry Wigan in 1870 had cylinders 36 inches diameter with a stroke of 6 feet. The Cornish valves were activated by a Gooch link motion deriving movement from a pair of eccentrics on a drag shaft located in line with the main cranks and rotated by drag cranks from the engine crankpins. These were supported by rocking links, which was Haigh Foundry practice. The inlet valves were on the inner side of the cylinders and the exhaust on the outer side.

Tail rods were fitted originally but removed to obtain a greater surface area on that side of the piston, when the steam pressure was increased from 60lb to 80lb per square inch. The bedplate and slidebars were of the 'H' type. Like other Haigh Foundry engines all components were not massive but of splendid proportions and of ample strength. The oak lagged parallel drum was 19ft. 4inches diameter but when first built, this engine wound from two levels, the King Coal & Wigan 9ft and half the drum lagging was of a smaller diameter - 15ft. 4inches. The brake was of the semi band variety but in the late 1930s this was replaced by post brakes. The stop valve was seldom closed, all controlling of the engine being done by the reversing lever, only to save time.

This engine was Haigh Foundry's 'Magnum Opus' and a superb example of craftsmanship at it's best in 1870.

Mine Drainage.

The bulk of the water met with in coal mining is encountered in the porous sandstones, grits and conglomerates which lie fairly close to the surface and thus is of course derived in the first instance from the rain that falls on the outcrops or streams or drains that cross them. In normal coal measure conditions it is unusual to find large quantities of water in the strata at depths greater than 200 yards. Thick beds of impervious shales and clays generally prevent the water penetrating below them. One of the earliest methods of draining mines, especially in districts where deep valleys cut through the coals, was to drive a drainage tunnel (known as an adit or sough) from a low point in a valley, on the slightest possible upward inclination until it met the coal, where a water level was driven along the contour of the seam. To the rise side of this level, coal winding and air shafts were sunk, and the coal was then cut out into pillars almost to the outcrop. These pillars were subsequently split or robbed back to the shafts.

To work the coal to the dip of the sough it was necessary to sink shafts and install pumps to deliver water into the sough or to the surface, or to wind water up in tubs or buckets. Chains of buckets or rag and chain pumps drawing balls of leather through wooden pipes, were in common use during the 16th and 17th centuries. These were worked either by water wheels or horse gins. Bucket pumps worked by the same means were also used at many pits and records show that all these methods were in use in various parts of Lancashire.

27

Some soughs were many miles in length, the most famous in Lancashire being the series of underground canals, begun in 1760, at Worsley, near Manchester, which served for both transport and drainage. These, together with the drainage or canal levels in the various coal seams intersected, were 44 miles in length.

Another sough which also served as an underground canal was near Taylor Pit, Standish. This connected to an arm of the Leeds and Liverpool canal and was driven 600 yards through rock to a point near Taylor Pit, where it intersected the Ince 7 ft. seam. From this point it was driven another 500 yards in the coal.

Perhaps the most famous sough however, in the Wigan area, is the Great Haigh Sough, the first length of which was driven by Sir Roger Bradshaigh, of Haigh, between 1652 and 1670. It was extended at various times until its completion to Aspull Pumping Pit in the 1870's, its total length then being 4600 yards, *Photograph No. 27.*

28

The transport of coal by boats on canals which went underground was developed in Lancashire in the eighteenth century and led to the construction of the Worsley network of underground waterways at the mines owned by the Duke of Bridgewater. The subject of the underground canals at Worsley is one about which much has been written and details of the technical achievements can be obtained from several technical papers which have been given to learned societies. The boats were propelled, when necessary, by a man lying on his back in the boat, pushing against the roof with his feet, although when coal was being sent through the canal they were drawn by groups of boys using ropes.

Photograph No. 28 shows a member of the canal inspection team moving a boat by means of his feet. When the canal system at Worsley was abandoned as a means of transporting coal, the main or trunk canal was maintained as a drainage waterway for mines still working having connecting roads to the canal system.

Photograph No. 29 — A boat emerging into the open at the Delph pool at Worsley.

Three of the team of four men can be seen, the middle one giving a final push against the roof brickwork; the inspection journey was three miles in length and took some four to five hours to complete.

Photograph No. 30 The team after a journey;

The deputy in charge - usually known as "The Admiral" - in this case "Admiral" Harrison - is on the right of the group. For many years a number of the old boats used on the underground canals lay on the bottom at Worsley, derelict and abandoned. At the request of industrial archeologists and museum authorities several were recovered and have been reconditioned.

Photograph No. 31 shows a canal inspection team of the period 1930-35,

It is interesting in that one of the large junctions can be clearly seen, with two boats which were apparently in good condition at that time. The arches of the branch canals can be seen on the left and right of the picture, with the larger arch of the main waterway in the background. The brickwork, constructed some 170 years before the photograph was taken, was built with hand-made bricks and is in very good condition. The construction of a four-way junction, with all ways supported by brick arches culminating in a span as wide as the one shown in the picture, is a feat which could only have been carried out by engineers who were not only highly skilled in the technique of brickwork support, but also conscious of its possible artistry.

The photograph shows three types of miners' lamps in use at that time; the fireman (or deputy) on the left is using a small type gas detector lamp:- probably the "Wolf Baby" lamp. The other two flame lamps are of the type known as High Candle Power lamps which were designed to give the maximum illumination possible from such a small lamp burning oil. The third lamp is an early electric hand lamp used in the mines by officials; it can be seen in the centre of the picture balanced on the side of the boat. These boats were subjected to considerable rough usage and consequently had to be of robust construction; this can be clearly seen in the left side boat.

30

31

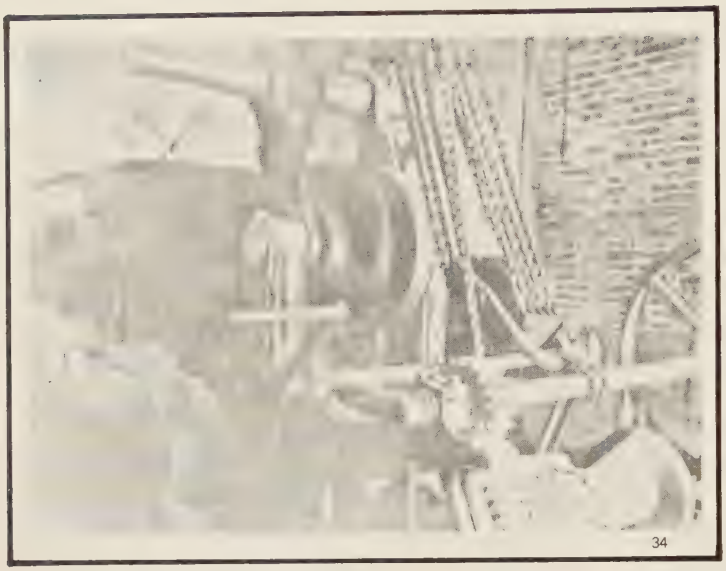
32

Photograph No. 32 The Rocher Pit at Park Bridge near Ashton-under-Lyne.

A typical 19th century Engine Pit equipped with a beam pump. Note the shear legs with the small pulley for the capstan engine rope which was used for installing the pumps, changing broken pump rods, taking off the clack box covers, changing clacks, buckets and pipes and all other heavy work. At right angles to the shear legs can be seen the headframe with the large pulley used for the kibble or bucket in which the shaftsmen rode. The capstan engine and small winding engine were housed in the buildings on the left of the photograph. Another engine pit at the colliery complex owned by the Lees family was Fairbottom Bobs. The pumping engine here was one of the very few remaining examples of Newcomen's atmospheric engine. It consisted of a cylinder open at the top and about 28 inches diameter, the stroke being 6 feet. The steam was generated by a wagon boiler, the coal being wheeled from a pit a short distance away. The piston was packed by pouring upon it a bucket of horse dung and water. This engine also performed the novel duty of a bird scarer. A cord tied to the elevated centre of the beam communicated with a "ricker" in the cornfields beyond. Its habit of "bobbing" its head when about its daily avocation caused the place to be called "Fairbottom Bobs". This engine, after being offered to Ashton-under-Lyne Corporation, was sold to Henry Ford in 1929 and re erected in the Ford Museum at Detroit, *Photograph No. 33.*

33

Photograph No. 34 The Duke Pit Cornish type beam engine at Oak Colliery Hollinwood near Oldham in 1921.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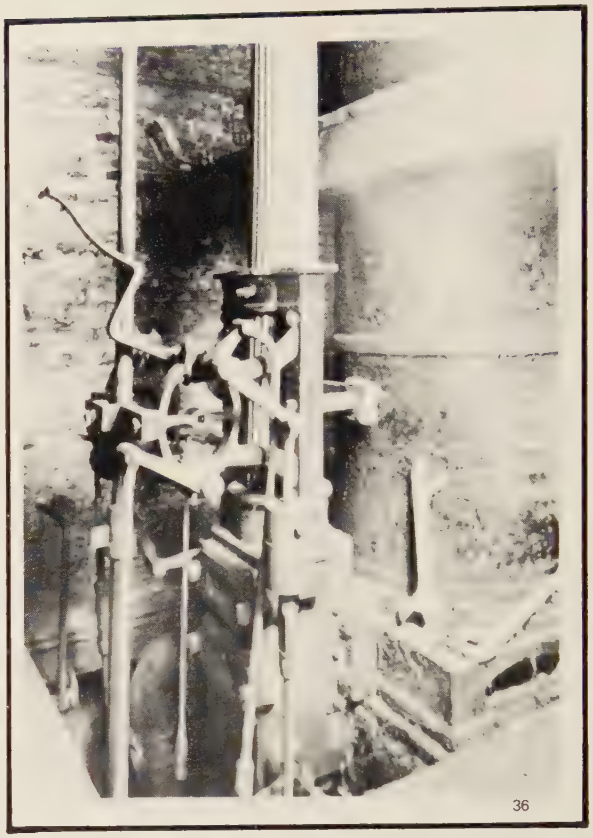
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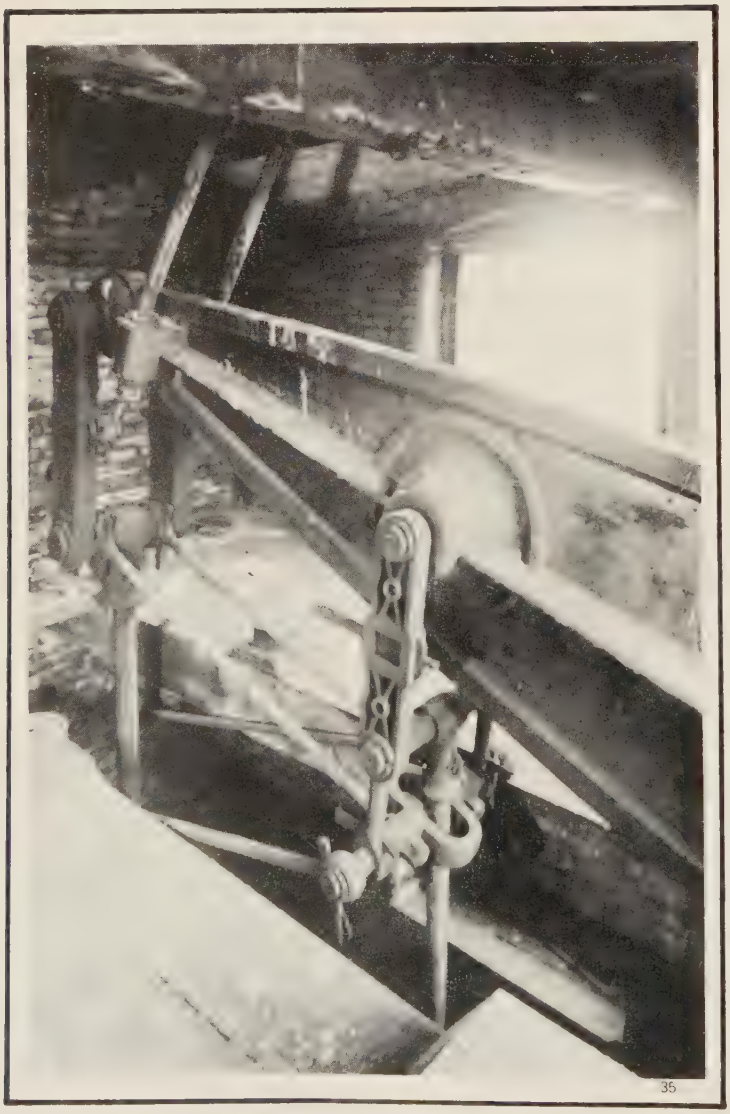
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This magnificent engine was built by Sir William Fairbairn the famous Manchester engineer in 1846.

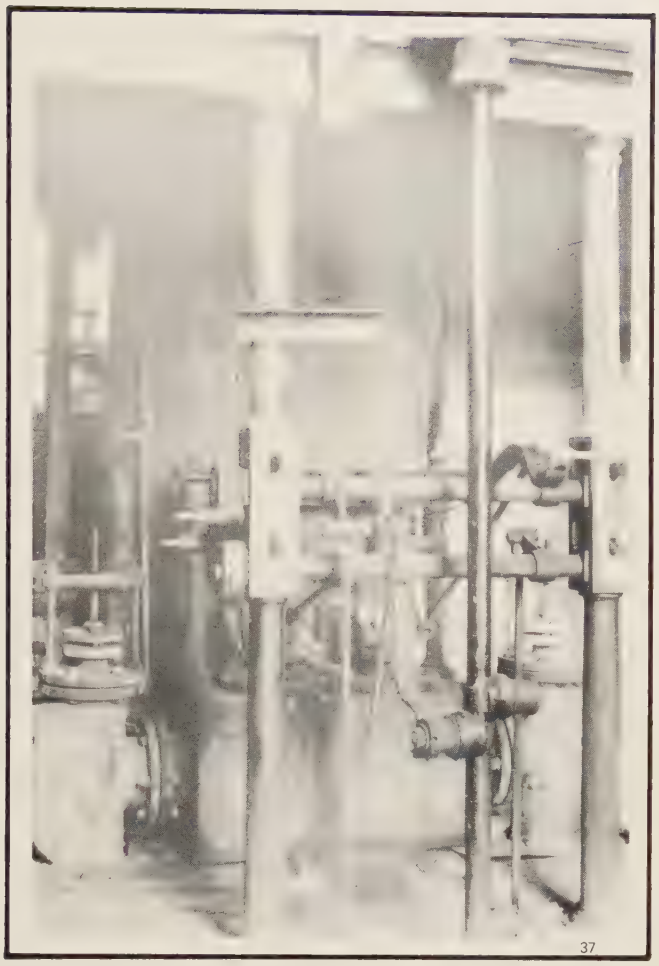
The cylinder was 6ft. diameter and the stroke 11ft. The beam itself was 35ft. long and 8ft. deep over the main bearing. The large masonry pier supporting the beam can be seen in the photograph together with the "indoor" half of the beam.

Photographs Nos. 35 & 36

Show the beam with its Watts parallel motion and the "working gear" or valve gear of a Boulton & Watt engine installed at the Old Engine Colliery Oldham in 1790. It was purchased by the Rochdale Canal Coy in 1810 and put to work as a pumping engine near Crime Lake at Waterhouses Ashton-under-Lyne.

Photgraph No. 37

The "working gear"(valve rods & tappets etc.) of the old beam pumping engine installed at the William Pit, Standish Colliery near Wigan in 1798.



Photographs Nos. 37a & 37b.

Pewfall Engine Pit Ashton-in-Makerfield near Wigan, showing pitmen and staff at the turn of the century.

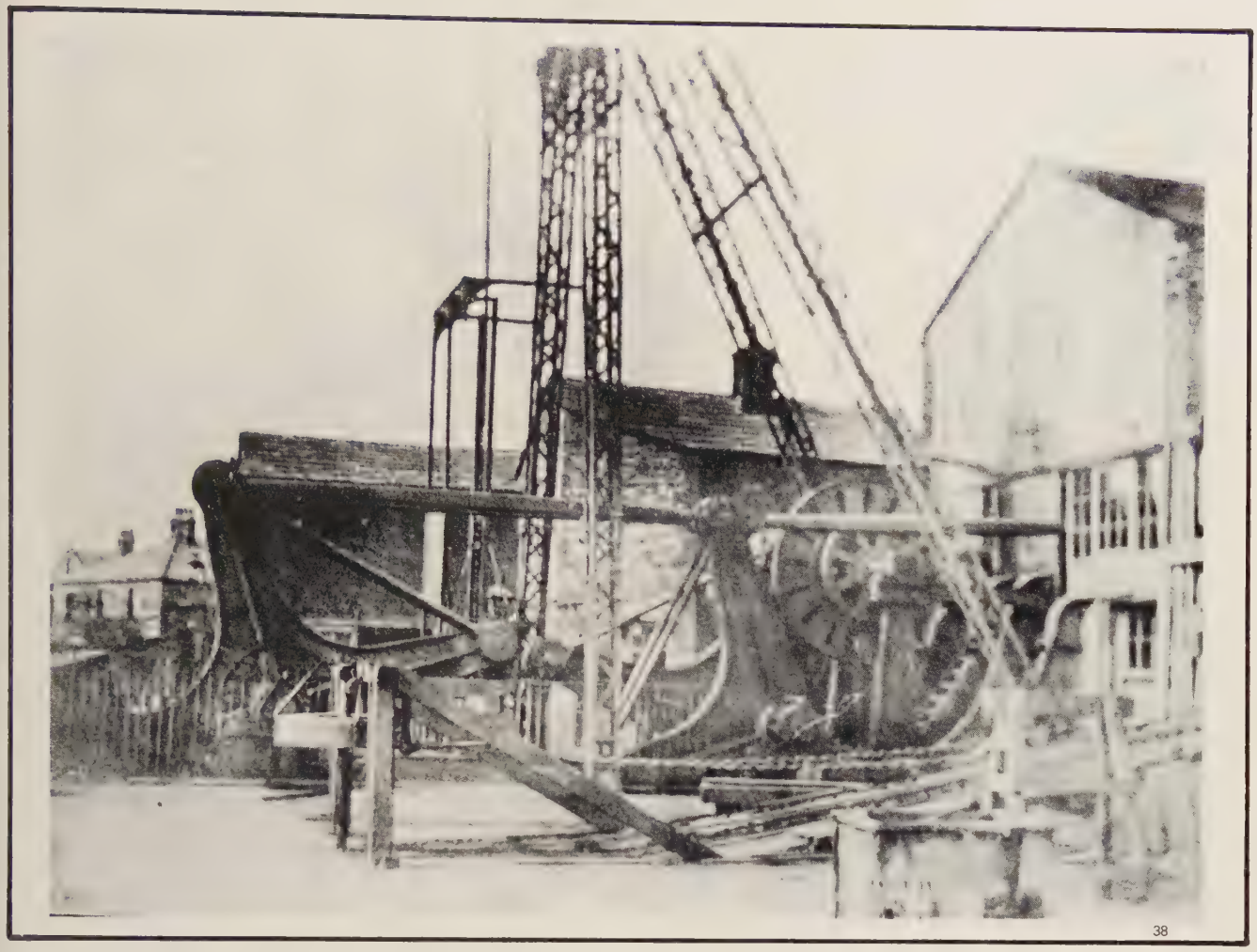
The engine erected by Hick & Rothwell of Bolton during the late 1820's provided good experience for Robert Daglish Jr. their apprentice, who subsequently became the owner of the famous St. Helens Foundry. Pewfall Colliery was owned by Messrs. Clough & Stock until 1860 when it was purchased by Richard Evans & Coy. It closed in 1911 & was 387 yds. deep to the Arley Mine.

Photograph No. 37c.

Shaftmen at Pewfall Colliery wearing leather clothes to protect them from the water falling down the shaft about ninety years ago.

37b

37c



Photograph No. 38

Shows a type of pumping engine that superseded the beam engine where a horizontal engine operated the pump rods in the shaft through quadrants known as "L" legs like those in the photograph at Bank Hall Colliery, No. 1 Pit at Burnley. The pumping engine was erected by Clayton & Goodfellows of Blackburn in 1886.

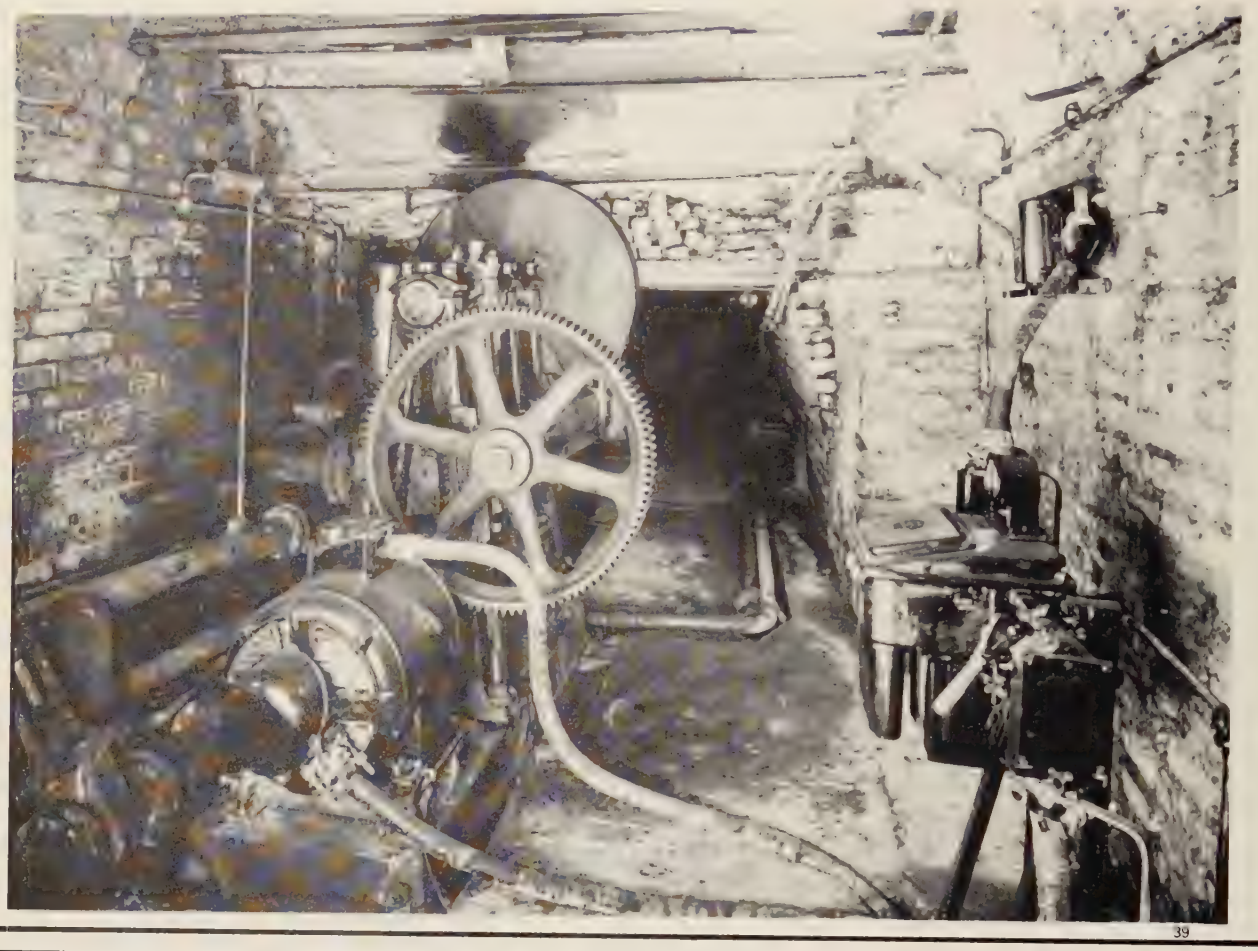
Photographs Nos. 39 & 40.

The introduction of electric power into the coal mines of Lancashire during the last decade of the 19th Century had an immediate beneficial effect on the drainage of the mines. Established underground pumping stations which were usually built near the shafts and pumped water to the surface were changed over from compressed air and steam to electricity. Water from the coal seam workings was delivered to the pumping stations by compressed air pumps or by syphons. The application of syphon drainage was a highly skilled technique which for many years enabled early mining engineers to drain large quantities of water from their mines at very little cost.

The photograph 39 - was taken in a pump house about 870 feet from the surface at the Oak Colliery (sometimes known as the Oak Victoria Colliery) in 1913 when the colliery was owned by the Chamber Collieries Co. Ltd.; the pump house was built in the Bent Seam which was of poor quality and not extensively mined. Oak Colliery was closed in July 1956.

Photograph No. 40 - shows a pump house also built at the Bent Seam horizon, but at Woodpark Colliery near Oldham.

The pump is a three throw ram type and it was installed 1,330 feet from the surface to lift the mine water to an intermediate pump house from which it was raised by a similar pump to the surface. Woodpark Colliery was closed in March 1955 owing to its having become an uneconomic unit. In 1913 Oak Colliery employed 340 men underground and 60 on the surface; Woodpark Colliery employed 320 below ground and 59 on the surface. Both were owned by the Chamber Colliery Co. Ltd. at that time.



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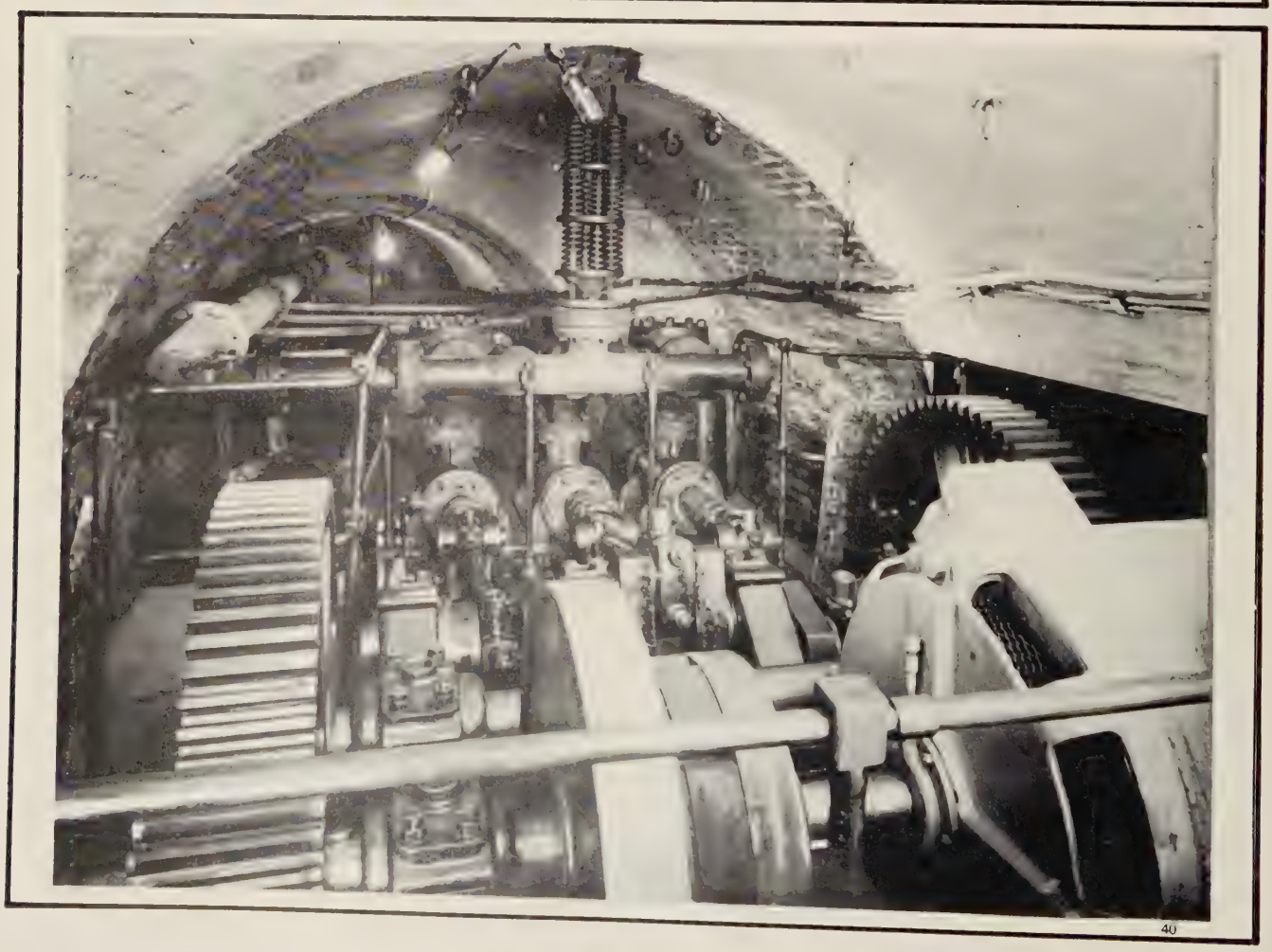

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Photograph No. 41. A collier cutting (holing) the lower part of a coal seam 6 feet thick with his hand pick; period about 1912.

The method of mining the coal was to pick out the lower part to a depth of 3 to 4 feet, drill holes into the upper part of the seam, which was now overhanging, charge the holes with explosives and blast the upper coal down. The work of hand holing was hard and hazardous. One of the principal hazards is shown clearly in the photograph; the upper part of the seam is projecting forwards (overhanging), should it fall the man would be seriously injured. The 'overhang' should have been secured by an inclined prop known as a sprag. The man's working stance -sitting on one clog -was common for the type of work and whilst allowing the man free arm movement, permitted a quick backward retreat from the coal when necessary. The only illumination available to such colliers was that of an ordinary miner's flame lamp and since the law required that these should be positioned in a place clear from the danger of being damaged by tools, the illumination of the coal was very poor.

The skill of such men played an important part in the successful working of coal mines prior to the introduction of coal cutting machines about 1900. In cutting coal by a hand pick as the man in the photograph is doing, advantage of the natural cleavages in the coal seam must be taken and this requires accurate placing of the pick point in a strong blow. Coal seams were planned and worked on lines which gave miners access to the natural cleavages, and where this was done successfully it provided a better marketable product; coal which had a high percentage of lumps.

Photograph No. 42. A picture taken in the 1870's at one of John Grant Morris's pits.

He was owner of Rose Bridge and Douglas Bank Collieries at Wigan. A collier is seen holing the coal from a crouching position. His young assistant, probably a son or nephew is operating a hand drilling machine known by the colliers as a "rack drill". It consisted of a handle fitted with a rachet & pawl, & a threaded rod known as the "worm" fitted with a sleeve with two lugs which slotted into a vertical stand. Three or four drills from 1 foot to 4 feet in length, all with sockets to fit over the square on the end of the worm completed the apparatus.

Photograph No. 43 shows the earliest method of drilling with a hand drill.

This consisted of an iron rod three to 5 feet in length tipped with steel at one end. The steel end was sharpened and tempered by the blacksmith so that it would cut the coal. Sometimes the rod was increased in diameter where the collier held it to give added weight. The method of drilling coal was to cut out a small hole with a pick in the desired position, then hold the drill in this hole, (as shown in the photograph) giving sharp blows in a forward and backward movement, at the same time turning the rod slightly with each blow. After drilling an inch or two in this fashion the drill was pulled out of the hole, a scraper inserted (seen leaned against the coal) and the hole cleaned of the coal dust from the drilling. It was possible, by varying the method of turning the rod to drill triangular holes.

Photograph No. 44 - A collier hewing coal at one of Morris's pits in the 1870's.

A deputy or "fireman" is seen behind him testing the roof with his stemming rod.

In Photograph No. 45 — A collier and his drawer are seen filling coal into tubs, with a deputy testing for gas in the background.

The absence of roof supports is very noticeable but this is another of the series of photographs taken in the 1870's when timber rules were sometimes lax and many fatal and serious accidents occurred from falls of roof.

A drawer is shown in Photograph No. 46 pushing a tub along a drawing road at a Wigan pit a century ago.

46

47

Note the bridge section rails, the wooden tub which seems to be of 7 or 8 cwt. capacity and the Wigan made miners safety lamp which emitted a feeble light.

Photograph No. 47

The young miner in the photograph is operating a coal cutting machine of the type used in working places not more than 15 feet wide. Such machines were known as Rotary Percussive Heading machines and were used in large numbers during the period 1900 to 1940. The "cut" in the coal seam, which can be seen on the left of the picture, was made by the chopping action of a pick secured to the end of a steel rod which rotates as it makes a reciprocating movement.

As the rod was working the man turned the machine on a quadrant mounted on the column set between the roof and the floor; when the arcing movement reaches the left or right extremity the operator moves the machine cylinder forward to deepen the cut. The man's left hand can be seen on a handle which he turns to feed the cylinder forward; a cut some 5 feet deep can be made in this way using rods of increasing lengths. The coal is next drilled and broken down with explosives before being hand loaded into pit tubs. The date of the photograph is probably 1929 or 1930 before the general introduction of steel pit props to support the roof and before the issue of miners' electric lamps to such men. The advantage of wearing clogs is clearly shown in the picture - the man is sitting comfortably on his left foot; a stance which was possible because of the rigidity of the wooden sole of the clog.

Photograph No. 48 An electrically operated coal-cutting machine working in a coal seam which is about 4½ feet in thickness.

The "cutting" of coal seams by machines developed generally in the last decade of the 19th Century and these machines were improved by various manufacturers both in this country and America during the period from 1900 to 1930. Their operation was to remove a horizontal slice of the coal to a depth of about four feet so that the rest of the coal could be broken down by using explosives. The machine in the photograph is one made by the Anderson Boyes Co. of Scotland - a chain machine of the type which was very popular from about 1930. Such a machine was capable of undercutting a coal seam along a length of some 150 yards in a 7-hour shift with an operating team of two men. When the "cut" was made at the bottom of the seam, the holes to contain the explosive were bored to break down the coal from the stone roof of the seam. If the "cut" was made at some convenient horizon between the floor and the roof of the seam the holes were bored above and below the position of the cut. The work done by the coal cutting machine men and the men who bored the holes (the drillers) was usually carried out either during the afternoon shift from 3 p.m. to 10 p.m. or during the night shift from 11.p.m. to 6 a.m.; the loading of the broken coal being completed between the hours of 7 a.m. and 2 p.m. The wire rope along which the machine hauls itself can be seen on the right of the photograph; the end of this rope is secured to an anchor post (known as a "warrick") erected by the men ahead of the machine. The photograph, taken about 1942, shows the wedge type steel pit props (known at that time as Bathgate props) erected under corrugated steel roof bars which are spaced four feet apart. Two props are shown under each bar and a third prop is erected near the coal face under each bar as the machine moves forward. The chalk lines, which can be seen on the roof are guide lines to which the men erect the pit props, thus ensuring that they are kept in a straight line.

Photograph No. 49 is a fine action picture of a man (a driller) boring holes into a coal seam which has not yet been undercut by a machine.

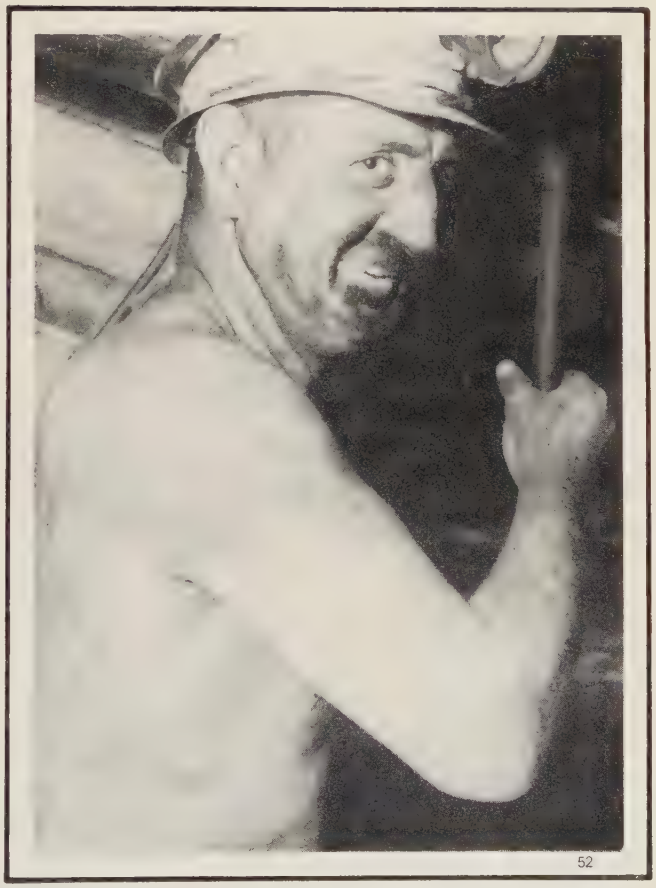
The coal seam which is about four feet thick contains a band of shale or dirt about 12 inches from the roof of the seam; it can be clearly seen on a line with the lamp secured to the man's safety helmet. In these circumstances the coal cutting machine would cut out the layer of shale to a depth of four feet or more and drill holes would be put in both above and below the cut; the shale excavated by the machine was removed before the coal was blasted to keep the final product as clean as possible. The drilling machine being used by the man in the photograph was known as the Power Vane Rotary machine, made by the Consolidated Pneumatic Tools Ltd. probably the most versatile compressed air drilling machine available at that time. The photograph was taken in 1942 at Bedford Colliery in Leigh, Lancashire. In average conditions an experienced driller would complete the boring of 100 drill holes, each four feet deep in his shift of 6½ to 7 hours actual working time. The job was hazardous, highly skilled and very important in the cycle of operations.

Photograph No. 50 shows the same type of coal cutting machine as the one in No. 48, cutting out the band of shale referred to in relation to Photograph No. 49.

Such a machine is known as an over-cutter because the horizon of the cut, which is made in the seam, is above the machine. Coal cutting machines, such as those in the photographs, were about 8 feet long and 3 feet wide and were designed to work along a straight line. It was most important that roof supports were erected in a straight line in order that the machine would make the same depth of cut in the coal and so keep the line of the coal face straight. The machines shown have now been superseded by power loading machines which not only excavate the whole of the seam without the use of explosives, but also load the coal mechanically on to a conveyor.

Photograph No. 51 shows one of the men whose responsibility it is to charge the holes drilled in the coal with explosives

Such men are known as "shotfirers" (in some areas the old term of "Shot-Lighters" is still used) and they are junior officials of the mine. They are usually qualified as Colliery Deputies and, in the event of any temporary absence of the deputy in charge of the district in the mine, they take on the duties of that official. The coal seam in the photograph is about 5 feet thick and the drill hole being charged with the explosives is about 2 feet from the roof. The explosive cartridge, which can be seen at the entrance to the drill hole, contains the electric detonator (it is known as the primer cartridge) and it is being pushed to the bottom of the hole with a wooden rod known as a stemmer rod. The two detonator wires can be seen held against the coal by the man's thumb; by this means he keeps them in tension as he pushes the explosive into position, thus preventing any kinking of the wires. The amount of explosive used in such holes depends upon the nature of the coal, the depth of the cut which has been made in the coal and the position (horizon) of the hole in the seam. The decision as to the amount of explosive used is the personal responsibility of the shotfirer. The photograph was taken underground in a colliery in the Tyldesley district in Lancashire about 1945; about 1,000 charges of explosives were fired every day in a medium sized colliery.



Photograph No. 52. - "Man at Work"

A close-up photograph of a Lancashire miner of 40 years ago. Such men worked as colliers and face workers, they were the men who actually mined the coal. They worked very hard, often in difficult conditions, and their tasks were the most dangerous in the mines.

These men were individualists, quick to help and equally quick to criticise; their safety and sometimes that of their mates, depended upon decisions they themselves had to make many times during their working shift. Working in small teams of three or four they were extremely loyal to one another both at work and in their leisure time. Their working "uniform" usually consisted of a safety hat, safety boots, socks and trousers or cotton "drawers". Their mid-shift meal was sandwiches and cold tea (or water) which they had carried into the mine from their homes.

Their work consisted of breaking and shovelling coal, erecting pit props and bars to support the roof; the number of props to be erected depended upon the man's assessment of the stability of the roof under which he had to work. Faliure to set an adequate number of props could (and often did) lead to the man being either killed or maimed by falling roof stones.

Photograph No. 53 appears to have been taken about 1930 and depicts a small team of men employed in the work of enlarging a supply road in a seam about 4 feet thick.

53

The stone above the coal seam is broken down by explosives after the coal has been removed and the loose shale is shovelled & packed into the space from which the coal has been mined. The photograph shows a location where a roadway about 13 feet wide and 9 feet high is being made and supported by arch girders erected at 4 feet intervals to support the roof. The men have almost removed enough rock to allow them to fix the next girder; when they have done so the vertical pit props will be removed for use when the next blast has been made. The man in the background is a deputy (known also as a "fireman") who is the foreman over a part of the mine; he is testing for the presence of gas with his safety lamp. The hammer, which can be seen pushed in the deputy's belt is used by him to knock on the roof as he examines the places where men are at work.

Should his knocking produce a hollow sound, the roof is weak and supports would be erected as soon as practicable. The conditions shown were typical for that period - wooden roof supports - no electric cap lamps and the men wearing clogs.

Photograph No. 54 is of a form of underground roadway support known as "cockering".

It consists essentially of a timber arch and was used to withstand heavy roof pressures. Although the example shown has been contorted by pressure it seems to have been a poor job to start with. The best examples were almost like church roofs. This kind of support was superseded by steel arches many years ago.

54

Photograph No. 55 shows a roadway enlargement of unusual dimensions at (it is thought) Moston Colliery near Manchester. The larger roadway is about 18 feet wide and over 20 feet high. It is high quality work.

Photograph No. 56. An interesting photograph of a team of men such as worked in a "stall" or "place" in the mining of coal.


56

The older man (in the centre) was the man in charge, responsible for the safe working of the place and for the safety of his workmates. He was also the man who received the money for the production of coal from that place, and he distributed the wages to the other two men. The young man sitting on the left of the group was known as the "mate" and he received the same amount of money as the collier in charge - he shared the money left after all "calls" had been paid - things such as pick sharpening, explosives and repairs to tools. The youth on the right assisted with the loading of coal into the pit tubs and with their transport to the mechanical haulage roadways. After a few years on this work he would be promoted to work as a mate or second mate to an older man.

The picture shows that their means of illumination was a type of miners flame lamp in use 50 years ago. The men are wearing typical Lancashire clogs and an early design of safety helmet. The drink was usually strong tea, the food tins were known as "tommy" tins and the meal time period (usually 25 minutes) was known as "Jack-Bit Time". The amount of clothing they are wearing suggests that the mine was cool; the roof supports shown are all wood also indicating that the photograph was taken about 1925. Steel pit props were introduced about 1927 in some pits, but they were not in general use until about 1940 owing to the colliers at several mines objecting to them.

Photograph No. 57. A typical scene in any Lancashire mine of forty years ago.

Three haulage lads, probably employed on haulage work near the bottom of a coal winding shaft, having a "Butty" (sandwich) a la Coal Dust during a temporary stoppage in the operations. Such boys aged 14 to 17 years were employed at all underground haulage junctions transferring the pit tubs from one haulage system to another. New boys were given simple work to do under the supervision of one or more older boys and were moved to more responsible tasks as they became proficient. When they reached the age of 17/18 they were moved to haulage work near the coal face as the first step towards becoming a junior member of the teams of men cutting and loading the coal. In more recent years (since 1945) the training of young boys has been subject to legislation and special training galleries have been established in which proper instruction is being given by experienced men.


57

58

59

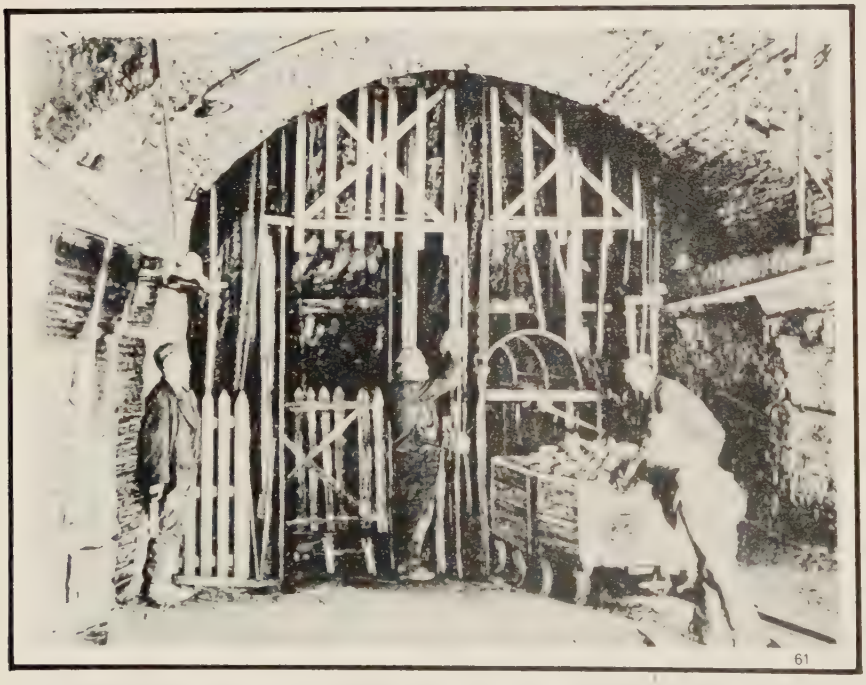
Photograph No. 58 is of Pony King with T. Grundy, a pony "tenter" in the stables of the Wigan 5ft. seam at Pemberton Colliery 40 years ago.

Photograph No. 59 shows the information board in the same stables with Jim Downham and the stable cat.

The job of the latter was to keep down the number of mice there. Pemberton Colliery was the only colliery in Lancashire with pony putting, which required a large number of ponies. Many pits used a small number of ponies on secondary haulage roads, but Pemberton was unique in Lancashire in having upwards of 250 ponies below ground. It can well be imagined that the regular feeding, watering, grooming & shoeing of this large number of ponies took a great deal of organising.

Photograph No.60.

Consultation between an undermanager and one of his staff (probably a deputy) taking place in the underground office at Chanters Colliery, Atherton, one of the mines belonging to Manchester Collieries Ltd. The undermanager (seated) was Mr. William Hughes who served in that capacity at the Chanters mine from 1916 to 1945; the calendar on the office wall is for the month of March in 1942. Consultations such as the one shown in the photograph take place daily and often during all three shifts - day, afternoon, and night. There were two coal winding shafts at the Chanters mine in 1937 -No. 1, of which Mr. Hughes was the undermanager, employed 400 men below ground and 240 persons on the surface, and No. 2 - in the charge of Mr. W. Ashton employed 470 men below ground with 201 on the surface. The mine closed in June 1966 after producing coal for more than 100 years.



Photograph No. 61 - Running full tubs into the cage at the Wigan 6 feet seam "mouthing" or inset in 1899 at Messrs Cross, Tetley & Coys Bamfurlong No. 4 Pit at Bamfurlong near Wigan. At modern pits this operation is now performed by hydraulic rams. Cages are of various sizes and capacities from one tub to twelve and when manriding is in progress from 6 men to sixty or more.

Skips, for coal winding only,became popular from the end of the 1930s and together with underground trunk conveyors instead of tubs and rope haulage made for greater efficiency.

Photograph No. 62. The pit brow at Rose Bridge Colliery, Wigan.

The browman or banksman is pulling a full tub out of the cage. Note the heavy wooden receiver guides and the rather flimsy cage.

Photograph No. 63. The pit brow weigh cabin at Rose Bridge.

The lad will be shouting out the tally number of the collier who filled the tub. Seen through the window are the owners weighman and the 'checkweighman' appointed and paid by the men; generally a union official. Besides keeping a record of each collier's tubs any tub which weighed more than average (thus showing there was dirt in it) was turned over and the dirt picked out and weighed. If this exceeded a certain agreed weight, the collier was fined or the tub confiscated.

Photograph No. 64. Men collecting their helmets prior to going below ground at Bickershaw Colliery in about 1937. Note the electric hand lamps.

64


65

Photographs 65 & 66. Early photographs showing the interior of the original pit-head bath house at the Gibfield Colliery owned by Messrs. Fletcher Burrows & Co. Ltd.


66

This company first installed pit-head baths on 4th August 1913 at their Victoria Colliery which was situated at Howe Bridge near Atherton; at that time 133 men were employed below ground and 25 on the surface. The venture was successful and at the end of the year 120 men and boys were using the baths daily. A larger bath house was opened at the Gibfield Colliery on 15th September 1913 providing a total of 40 washing cubicles and 400 suspender hooks for the dirty pit clothes. The men brought their own towels and soap and there was provision made for them to lock up their clean clothes. An installation at Chanters Colliery, Atherton, and one at Burnley (Reedley Colliery) were completed in 1914. The photographs show the washing cubicles along one side of the bath house and the men's working clothes suspended above the central heating pipes.

Photograph No. 67. — Gibfield Colliery as it was when closed by the National Coal Board in August 1963 owing to the coal reserves having become exhausted. The three mines originally owned by Messrs. Fletcher Burrows & Co. Ltd. were Howe Bridge, Gibfield, and Chanters. Howe Bridge was closed in September 1959 and Chanters in June 1966. The Gibfield Colliery was connected underground to Chanters, which was joined to the Bedford Colliery at Leigh and the Nook Colliery at Astley.

68

THE EMPLOYMENT OF WOMEN AND GIRLS AT MINES

Following the prohibition, by legislation, of the employment of women and girls below ground in mines, it was proposed by certain Members of Parliament that they should also be prevented from working on the surface at coal mines. The suggestion was strenuously opposed in the coalfields and on the 17th May, 1887 a deputation of women travelled to London for an interview with the Home Secretary to explain their objections to the proposed law. The Amendment which was framed to prevent females being employed about coal mines came before Parliament on the 23rd June 1887 and was defeated.

In 1911, when the Coal Mines Act of that year was being considered, the question of allowing the continued employment of women and girls on the surface at mines was again raised and once again a delegation of women went to London - this time to the House of Commons - to object to this new threat to their livelihood.

One of the women from Lancashire was Mrs. Gee (Polly Gee) of Highfield near Wigan who was employed on the coal cleaning screens at Pemberton Colliery.

Photograph No. 68 shows Mrs. Gee in the "working uniform" she wore when the deputation attended the House of Commons. Each pit brow girl at Pemberton Colliery was provided with a new set of working clothes every year.

The new legislation did not alter the position - women and girls were allowed to work at coal mines as before.

The campaign organised to stop employment of women appears to have been an unpleasant one; the following quotation from the Annual Report of H.M. Inspector for Mines for West Lancashire for the year 1885 is of interest:

> *"The question of the propriety of employing women on the pit banks is attracting a good deal of attention and the Lancashire women especially have been subjected to considerable abuse by persons who pose as their friends. Their moral character has been gratuitously libelled and their working dress pronounced bold and unbecoming. So far as my observation has gone I have seen no good reasons for legislation to prevent these women earning a livelihood at the occupation they have chosen; they always appear orderly and industrious and it is a Favourite Employment."*

At the time that this was written there were 1407 women, of whom 110 were under 16 years of age, working on the surface at mines in the West Lancashire Area only.

"THE LADIES OF THE SCREENS"

Photograph No. 69.

Although the women who worked at the mines were usually known as "Pit Brow Women" because many of them were employed about the "Pit Brows" (in the vicinity of the mine shafts) in the nineteenth century, they have generally been engaged in coal cleaning during the past 50 years. The three ladies in the photograph were employed at one of the collieries in the Atherton area in 1942 and they are typical of the hundreds who by their hard work over the years, doing a hard and dirty job, played an important part in the maintaining of a high quality product during the period that the inferior coal seams were being mined. Their head-dresses were designed to prevent the coal dust from the picking belts getting into their hair; the picking belt rooms were very dusty places.

Photograph No. 70. Two new recruits having a "tea break"; the size of the tea cups is worthy of special note.

The majority of these women carried baskets, similar to the one in the picture, to hold their food and towels. A large colliery would employ about 100 such women during the main coal winding shift and they were expected to be in their places of work at 7 a.m.

Photograph No. 71. Girls and women working at a "picking belt".

The number of "hands" suggests that the coal being dealt with is of an inferior kind requiring careful examination. A picking belt is 4 feet wide & is generally constructed of small hinged plates moving forward at a predetermined speed slow enough to allow the women to examine all the larger pieces. In a screens house there were from three to six such "belts" to deal with various kinds of coal. The women were transferred to the different belts as the loads of coal from the several locations in the mine changed during the shift.

Photograph No. 70 — Two new recruits having a tea"break."

Photograph No. 71 — Girls and women working at a "picking belt."

Photograph No. 72. Women dealing with lump coal at one of the Atherton collieries owned by Messrs. Fletcher Burrows and Co. Ltd.

The period is about 1920 and the photograph shows clearly the importance of the shawls used by all the women.
The screen (or belt) can be seen on the right of the picture; it is of open mesh construction which allows the small coal to fall through. The girl on the left is using a pick to break a large piece of coal which has been lifted from the screen because it was too large and too inferior to be dealt with on the moving screen.

Photograph No. 73. A group of "Pit Brow Women" leaving the screens to complete their working shift doing occasional jobs (usually it was handling supplies).

At many mines coal winding would stop at 2.30 p.m. and the picking belts would close down about 3 p.m. The women's shift did not end until 4 p.m.

74

Photograph No. 74.
The screen foreman with his team - period about 1920.

The foreman was responsible for seeing that a satisfactory quality of coal was maintained and that the customers' orders were completed in time. Each team of women pickers was also in the charge of a senior woman who concerned herself with the welfare of the pickers.

Photograph No. 75 is of two good looking Wigan girls operating a "kick up" tub tippler at one of Morris's pits a hundred years ago.

75

In photograph No. 76 men are seen loading cannel by hand at Rose Bridge Colliery. Cannel brought twice the price of ordinary coal and therefore it was worth taking care with the production and loading of it.

76

Photograph No. 77 shows a coal loading chute at one of the John Grant Morris's Pits in the 1870's. The pit brow girls are loading the "Mary Jane" belonging to J. Mawdsley with round coal. Many of the boats on the Leeds & Liverpool & Lancaster canals had a carrying capacity of 60 tons.

77

Photograph No. 78. Bankes's Wigan Pier.

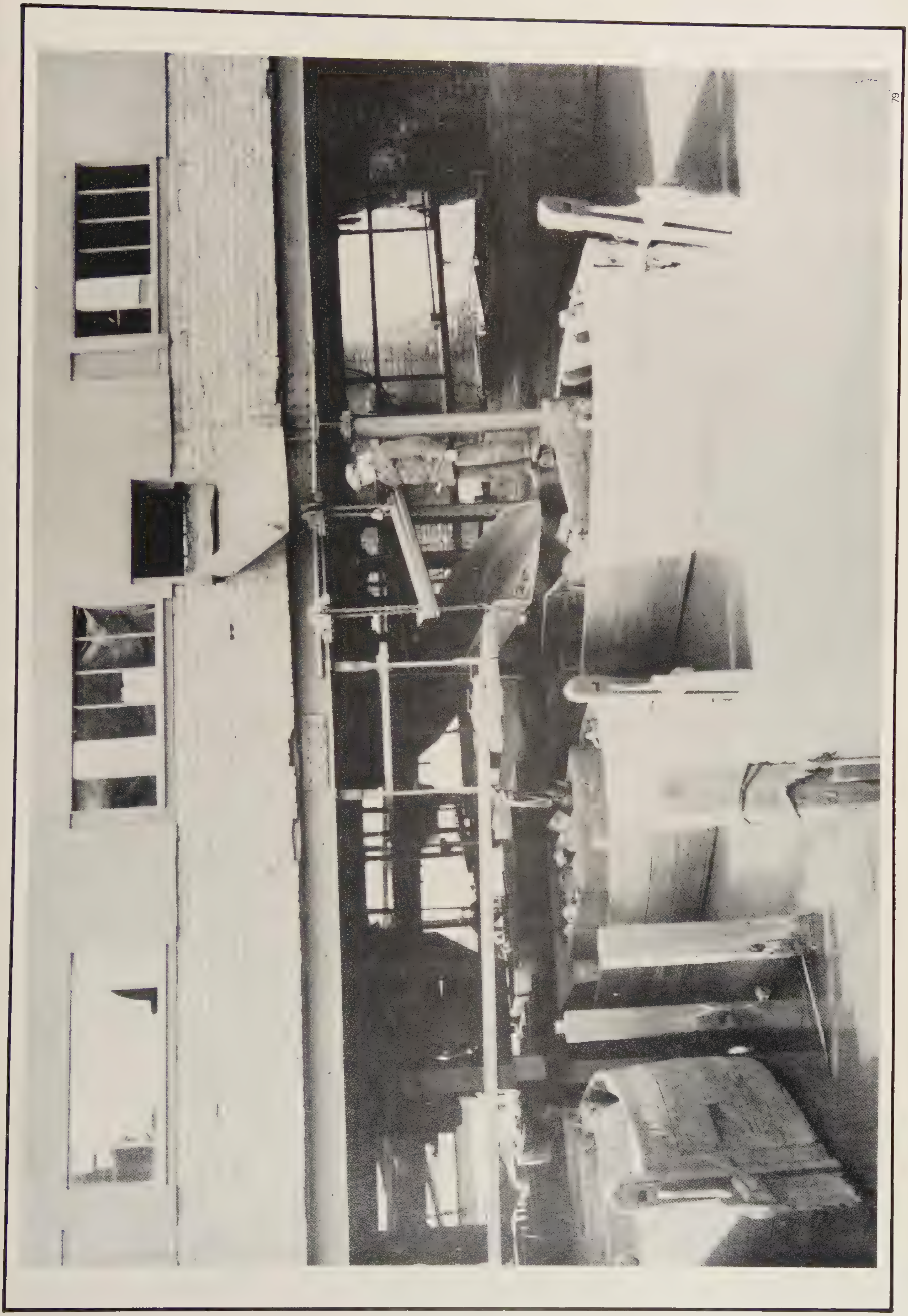
The Pierhead with wagon tippler on the Leeds & Liverpool Canal at Wigan. This was served by the railway from Winstanley Collieries, known as the 'old incline' and was only one of many colliery pierheads on the canal in the Wigan district during the 19th century.

It was constructed originally in 1822, by Thomas Claughton, to serve his Stone House Colliery at Goose Green, but Meyrick Bankes, owner of Winstanley Collieries purchased it and connected his railway to it in 1842.

Many boats were employed in taking coal from this pier to Liverpool where some of it was transhipped into vessels for Ireland and at one time for North America. The colliery owner, Meyrick Bankes, owned his own boats which included 'The Fair Maid of Winstanley', 'Squire', 'Eleanor', 'Gruinard', 'Septimus', 'Ant & Bee' and 'Mersey'. Many more however were hired. The coal wagons came down the line from Winstanley with the doors at the front. They were drawn into the shunt adjoining the Pier Head and each one was then uncoupled & pushed into the hooked rails of the tippler, when the cotters were knocked out of the door at the front. The tippler was then raised from the back by a cog & rack arrangement worked manually in a chamber underneath until the wagon tipped forward & stood upended at a high angle, shooting the coal out into the barge.

The tippler was then returned to the level position and the wagon drawn out by large draught horses into the empty line of the shunt and coupled to the wagons emptied before it. As much as 1000 tons per week were despatched from this pierhead in the middle of the last century. Besides Winstanley Collieries, it was used from the latter part of the last century up to its demolition in 1929, by the Worsley Mesnes Colliery Coy., whose pits were in that area of Wigan.

The rapid development of surface canal transport in Lancashire enabled mine owners to connect many of their mines to the system either by constructing branch canals and "pools" and by sinking new mines in locations convenient, or by conveying the coal from the mines by wagon-ways to canal piers constructed by the canal company specially to accommodate such traffic. In the early stages of this development the unloading of the coal was slow and laborious by means of hand filled skips raised from the boats by cranes. An improvement on this system was the use of "canal boxes" made to sizes suitable for the particular boats in use. Each box had a "lifting eye" at each corner to facilitate the speedy removal of the full boxes from the boat by quayside cranes. These boxes can be seen in Photograph No. 79 which also shows coal being loaded direct from the coal-cleaning screens at a canal pool constructed adjacent to one of the mines owned by the Manchester Collieries Ltd., and which had formerly belonged to the Bridgewater Trust. Several such installations were in use for many years in the Lancashire coalfield - the one in the photograph was probably in the Astley district in the 1930's. The mechanisation of coal transport on roads gave a quicker service to industrial undertakings not convenient to canals and many branch canals were closed. The use of the railway wagon tippler and the large capacity tipping motor wagons enabled piers on the main canals to remain in operation until recently.

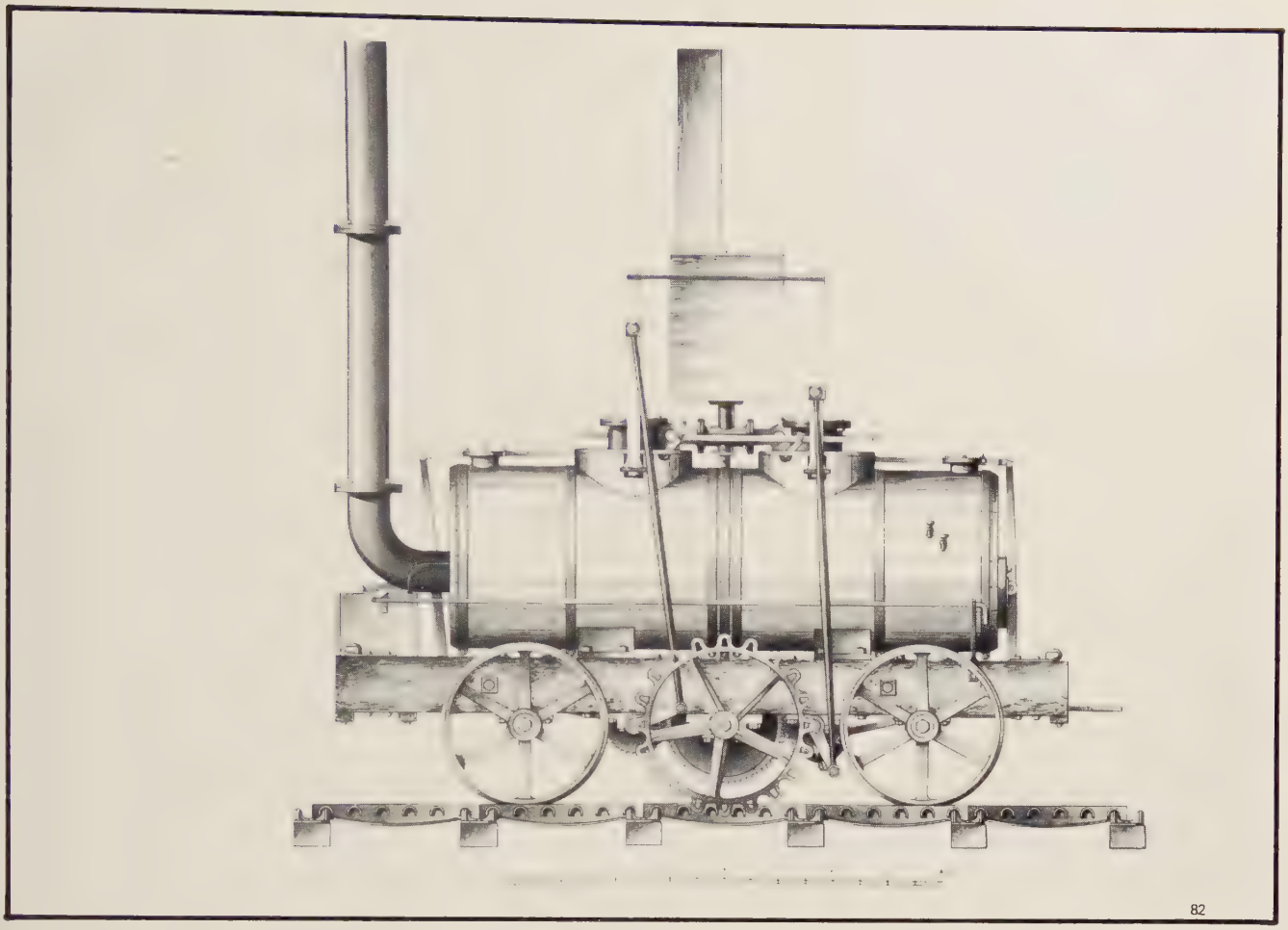


Photograph No. 80 —

Taken at Bickershaw Colliery - a mine still in production - shows an 8-ton motor tipper loading a canal boat which had a capacity of 45 tons; the fuel was taken to a power station in the Wigan area. This method of transporting coal from Bickershaw Colliery ended on 11th August 1972.

Photograph No. 81 —

Building a boat to carry coal on its receipt from an endless chain haulage (right, middle distance). The scene was taken in 1863, near Diamond Pit, Bardsley.



Photograph No. 82. Locomotive "Yorkshire Horse",

Lancashire's first loco, built to Blenkinsop's design by Robert Daglish in 1812 at the Haigh Foundry, Wigan. It was put to work in January 1813, on a cogged railway, at Clarke's Orrell & Winstanley Collieries near Wigan.

Two similar engines were built a year or two later, but by this time it had been discovered that the cogged rail was unnecessary, as simple adhesion was sufficient.

Perhaps a few statistics of this ancient locomotive might be of interest.

Boiler - 9ft long, 4ft-3in high, 3ft-2in wide, made of ½in plates
Firetube - Set 3in above bottom of boiler. 2ft-3in dia., ⅜in thick
Steam Pressure - 32 lb per sq. in
Chimney - 14ft high, 20in diam. at bottom
16in diam. at top
Cylinders - 8in diam., 2ft stroke
H.P. - 14
Coal Consumption - 140 lb per hour or 15 cwt in 12 hours
It would evaporate 420 gallons of water in 12 hours
Boiler Feed Pump - brass - 2in diam., 4in stroke
Oak Frame - 16ft long, Sole bars 12in deep x 5½in thick
Wheels - 3ft diam., 4¼in broad on the rim
Wheel Base - 7ft-2in, Axles 3¼in diam.
Gauge of Railway - 4ft-0in
Weight of Loco with 16cwt water in tank - 6 tons

At 40 to 50 strokes a minute the engine travelled at from 3 to 4 miles an hour. It would pull 30 wagons with a total weight of 90 tons on a level road.
The particulars of these wagons were as follows:

Length & width at the top	7ft 6in. x 3ft 6in.
Length & width at the bottom	6ft 6in. x 2ft 10in.
Height of wagon body	3ft 10in.
Axles	2¾in. octagon, journals 2½in. with square end staked fast in the wheel
Bearings	3½in.
Wheels	3ft dia. with crooked arms.
Wheelbase	3ft 6in.
Weight of wagon	22 cwts of 120 lb.

Clarke's Winstanley & Orrell Colliery railway, relaid by Robert Daglish before 1812.

Photograph No. 83 shows several stone sleepers still in situ today.

The gauge of the track was 4ft and the fish bellied & cogged rails were fixed on cast iron chairs, spiked to wooden plugs driven into holes in the stone sleepers. Daglish however brought in the system of bolting the chairs to the sleepers by drilling holes right through them & using large washers on the bolt head at the bottom of the sleeper. The track was double the whole way.

Photograph No. 84 — Locomotive 'Lindsay'

Built in 1887 at the Kirkless Workshops of the Wigan Coal and Iron Coy. Ltd., for use at the Company's collieries and Iron and Steel works. An 0-6-0 with saddle tank and 16" cylinders, it was quite a powerful locomotive and was registered by the railway companies for running on their main lines.

Several of these locos were built at Kirkless and exhibit features of those built by the London & North Western Rly. Coy at their Crewe Works. T. M. Percy, Works General Manager, at Kirkless, spent some time, in his early days, on a course of training at the Crewe Works and some of the fitters from Kirkless were also sent there for training in locomotive building. During the early part of this century, Wigan Coal & Iron Coy Ltd. had 32 locomotives, (twenty of them being powerful 16" & 14", 0-6-0's) and between 6000 & 7000 ten & twelve ton coal wagons, for running on the main lines, besides many for internal use only and other special types at the iron & steel works. The quantity of coal to be dealt with amounted to 10,000 tons a day from 23 collieries & washeries and in addition, iron ore, limestone and washed slack had to be taken into the iron & steel works. Molten slag was taken by the locomotives to the slag tip and this lit up the sky at night for miles around.

Products from the iron & steel works and other works associated with it had to be transported by rail. These included pig iron, bar and round iron, rolled steel sections, coke and the associated by products, concrete flags, macadam and tar macadam. In various parts of the company's establishments there were also brickworks & limekilns.

When a colliery locomotive had to travel over either the London & North Western Rly. Coy's main line or that of the Lancashire & Yorkshire Rly. Coy., the Motive Power Dept. Engineer of the railway concerned was notified and he would send an assistant engineer to examine the loco, especially the wheel flanges & tyres and if everything was satisfactory a permit would be issued by the Railway Company. They then sent a main line driver to accompany the Wigan Coal & Iron Coy's driver & fireman, on the footplate. All "Wigan Coal" drivers who had to take locos on the main lines were required to have an eyesight & Rule Book Test every 6 months.

This fine ninety three year old engine has now been restored to full working order.


LINDSAY

85

Photograph No. 85 — Locomotive "Billinge" built by Messrs. Andrew Barclay & Co. Ltd. of Kilmarnock, works number 1465. It was delivered new to Winstanley Colliery near Wigan in September 1916.

As can be seen from the photograph it was an 0-4-0 outside cylinder saddle tank machine, the cylinders being 14" diameter by 22inch stroke.

The wheels were 3ft 5 inches diameter. Along with two similar locos it worked the Leyland Green Pit of the Winstanley Collieries Co. Ltd. near Wigan. This raised on average 1000 tons a day which meant that 100 ten ton wagons had to be moved to one of three points i.e. 2¼ miles to Bankes's sidings on the L & Y Rly at Winstanley; 3¼ miles to Wigan Pier at the canal basin at Wallgate, Wigan, or the Lancashire Union Line near Goose Green.

There were scores of miles of private mineral railways in Lancashire fifty years ago & very many locomotives and thousands of coal wagons operating on them.

Photograph No. 86 The Winstanley Colliery railway to the Lancashire & Yorkshire main line from Wigan to Liverpool.

This is typical of many colliery branch lines which often ran through quite pretty country. The high wall on the right of the photograph is the boundary wall of Winstanley Hall Park, where the owner of the colliery, Meyrick Bankes, lived at the time the line was constructed. Work was commenced in 1848, it was in use by 1851 and is said to have been worked by a stationary steam engine, until locomotives were purchased from 1879 onwards. The first locomotive to work on this line was 'Eleanor' named after the squire's eldest daughter.

The coal wagons used on the colliery inclines at the end of the 18th century were small in capacity; those at Clarkes Winstanley & Orrell Colliery being of 2 tons capacity, or 2 tons 5 cwts well filled. Up to the middle of the 19th century the wagons at Bankes's Winstanley Colliery were no larger than Clarke's. As regards the rolling stock on the tramroads to the canals, the design, strength, capacity, maintenance etc., was entirely at the discretion of the colliery owners, but with the construction of main line railways, when it became possible to send wagons along the railways direct to the customer, it became necessary to standardise the design and specification of wagons. Up to 1856 the wagons at the Earl of Crawford & Balcarres's Haigh Colliery, probably at that time the most important Colliery in Lancashire, were built to a capacity of 3½ tons. From that year however these were gradually replaced by much stronger built wagons with a capacity of 6½ tons. 448 wagons were in use at Haigh Colliery in 1856, thirty six being hired and 412 the property of the Earl. Gradually the size of coal wagons was increased to 8 tons during the latter half of the 19th century and then to 10 tons & 12 tons early this century. The specification was continually improved by the Railway Clearing House and the Colliery companies were forced to comply. Dead buffers were replaced by spring buffers & brakes, wheels, bearings, springs, drawbars, links & hooks were improved.


86

Photograph No. 87 shows a Pemberton Colliery 8 ton wagon, No. 812, outside the Cotton Shed at the Lancashire & Yorkshire Rly. Coys goods yard at Wigan in 1919.

Overall dimensions were, 15ft-6in long, 7ft wide and 4ft deep, with one end door, 2 side doors & 2 bottom doors. The livery was black, with white lettering in the shape of two large flattened B's on each side representing Blundells, the family who had owned the collieries for 143 years when the photograph was taken. The firm owned close on 2000 of these wagons early this century.

Photograph No. 88. — The Food Committee at the Favourite Pony Dick Inn at Pemberton preparing food for strikers children during the 1921 colliers strike.

Photograph No. 89

Police guarding Westleigh Colliery near Leigh during the 1912 Miners Strike for a mininum wage.

Photograph No. 90

The Military at Westleigh No.1 Pit during the 1912 strike.

Photograph No. 91. Harry Twist, Miners M.P., haranguing his constituents in Leigh Market Place, probably during the 1926 strike.

Photograph No. 92. Stephen Walsh, Miners M.P. for the Ince Division opening the Mining Department at Leigh Technical College 1927.

From as long ago as 1792 when Wigan miners threatened to destroy the collieries by pulling the engines down and filling up the pits, strikes and lock outs have been the bane of the coal mining industry.

Untold hardship, misery and deprivation has been caused over the years by these strikes and lock outs and occasionally rioting took place. Local unions were formed in the early part of the 19th century and from 1841 a National Miners Union became a power to be reckoned with, but after a disastrous strike in 1847, it petered out. District Lodges carried on however and the Wigan Colliers Union was active in the 1850's and 60's. The Miners Federation of Great Britain was formed in 1889 but did not include the Durham and Northumberland coalfield.

However, it was a very powerful union and brought 400,000 men out in 1893 when the owners demanded a reduction of 25% in their wages. Sam Woods, M.P. of Lancashire was Vice-President and Thomas Ashton also of Lancashire was Secretary. Other active Lancashire officials were William Pickard of Wigan, Thomas Aspinwall of Skelmersdale and John Cheetham of Pemberton. A sliding scale had been introduced in Lancashire in 1888 by which wages were made to correspond to coal prices. The 1893 lock-out lasted sixteen weeks and resulted in extreme poverty and suffering. Arrangements were made to feed children at schools and chapels and soup kitchens were set up at most of the public houses where men, women and older children could get soup, hot pot, potato pie etc. Old people were fed at home. All this was voluntary, unlike today when everything is under the umbrella of the State. Food tickets were given to needy people so that they could obtain supplies from shopkeepers. Many farmers, butchers and grocers very generously gave meat, milk, potatoes and other food and allowed their customers considerable credit. Even colliery companies and royalty owners contributed weekly amounts to the distress funds.

Many miners began to work the outcrops of seams, especially where these occurred on waste land or in wooded valleys, trees being cut down to provide pit props. These tiny illegal pits however aroused jealousy amongst those strikers not involved in them and many fights occurred between mobs of the latter and the coal getters.

Police forces from non-mining towns in Lancashire, such as Warrington, sent their men to help police the collieries and these were almost always augmented by "the military". During the 1912 Strike, Major General Bethune, who commanded the South West Lancashire Territorial Division, took charge from his headquarters at the Royal Hotel in Wigan. The 16th Lancers also came to Wigan together with 450 Officers and men of the Suffolk Regiment, the latter being stationed at the Drill Hall. It seems to have been official policy to use, as a general rule, soldiers from regiments recruited in non-industrial counties.

The above description can be applied in general to the great succeeding strikes in 1912, 1921 and 1926. For instance, in the "Pony Strike" of 1905, which affected only Pemberton, eleven soup kitchens were open where free dinners were given to 2000 children, 5 days a week. The 1912 strike forced the Government to pass the Minimum Wage Act, after passing the 8 hours Act a year or two before.

In 1921 the men refused to accept a reduction in wages and were locked out on April 1st. They lost the struggle and resumed work at the reduced rates on 1st July. The owners demanded further reductions in wages and longer hours in 1925 and the Government, alarmed at the situation, promised a nine months subsidy to the industry. Once this had ended in April, 1926, the lock out notices went into effect, and this signalled the start of the Great General Strike. As in the case of previous strikes and lock outs, safety men, including all the officials, a few boiler firemen, winding enginemen and some others were allowed to work.

However, after seven months the men were forced to return on a lower rate of wages and a longer working shift. The so-called hardships of a present day strike such as the miners strike of 1974 bear no comparison to the hardships, distress and dire poverty of those of the past.

Photograph No. 93 —

During the 16 weeks' stoppage in the mining industry in Lancashire in the year 1893, large numbers of miners and their families earned money by "picking" coal from the colliery waste heaps and selling it. Such coal had been discarded as inferior during the normal working of the colliery.

The photograph shows groups of pickers on a large pit heap adjacent to the Victoria Colliery at Howe Bridge, near Atherton in Lancashire. The mine, which can be seen in the background, was owned by Messrs. Fletcher Burrows and Co. Ltd., and in 1894 employed 217 men underground and 47 on the surface. The task of "coal picking" was (as can be seen on the photograph) a family affair, the men and women collecting the coal and removing the dross (dirt) and the children bringing food and drink.

94

Photograph No. 94 Pemberton Colliery Schools Rugby Team 1909.

Tough boys who had been fed at the school during the 1905 "Pony Strike" and who were soon to endure the 1912 Minimum Wage Strike.

95

Photograph No. 95 A man and pit brow woman emptying a dirt wagon on the 'tip' at Rose Bridge Colliery, Wigan.

The boy with the spade and the one with the black face are also probably wagon emptiers, the other children are coal pickers. The dirt would be from the screens or sent up the pit from tunnels and roadway enlargements where there was no packing room. The wagon is an old one probably only used internally on the colliery.

Photograph No. 96. Pay day thought to be at Rose Bridge Colliery Wigan in the 1870's.

Note the large proportion of boys in the crowd. It is a good illustration of the term "men & boys" seen on many a mining disaster memorial of the last century. The large number of inexperienced boys used in the pits in those days must have contributed to the high accident rate. Those in pit clothes look very rough & dirty as is natural & their clothes are very poor, unlike the Durham & Northumberland miner who wore a special flannel pit suit with knee breeches & stockings. Lancashire miners would wear any old clothes that came their way. Those in the picture not in pit clothes, some of whom are in "Billy Cocks" are poorly dressed, this being indicative of the general poverty. The only "respectable" looking people in the old meaning of that term, are the three behind the crowd near the corner of the building, one of whom is wearing a 'Derby' hat. He is rather distinguished looking & may be the colliery manager Mr. Bryham. His two companions to the left of him would also be colliery officials. The big man on the right of him looks as if he could be a tunnelling or 'wideworks' contractor or some other important workman.

Photograph No. 97. Two likely lads just out of the pit & ready for home last century.

They were probably drawers i.e. they pushed empty tubs from the rope haulage, to their employer the collier at the face and then pushed the full tubs back to the shunt. On the other hand they may have been employed on the rope haulages in the main roads dealing with the supply of tubs to and from a large district of the pit, or driving ponies pulling tubs on secondary haulage roads.

Photograph No. 98. An old man transporting a heavy larch bar from the timber stockyard to the pit shafts a hundred years ago.

Bars like this were used only on main roads, a flat surface generally being sawn on two sides of the bar. Split bars i.e. seven or eight inch diameter props sawn down the middle, were used as supports on secondary roads and coal faces.

Photograph No. 99
A Wigan collier posing for his photograph on a sunny day in the 1870's.

His face & hands are dirty as if he has just come up the pit but his clogs are polished -very unusual for pit clogs. He probably worked at Rose Bridge Colliery as the photograph was in a series taken at that colliery and judging by the size of his can this could be right, as at that time it was Britains deepest pit at 815 yards. The workings were very hot in the Arley Mine, the strata temperature being high and the ventilating current circulated by means of a furnace, which though a large one would hardly be adequate.

When he went to work in a morning, the collier's can would be full of either water or cold sweetened tea without milk. In his 'Tommy Tin' there would be cold bacon sandwiches with plenty butter on the bread or perhaps jam sandwiches if wage rates were low.

The lamp is of the Marsaut type, made by J. H. Naylor of Wigan at that period. He would have to pay for lamp oil, wick etc., but the practice of allowing men to take their lamps home with them was a very dangerous one as although the gauze could be readily examined, the state of the washers between the bottom of the glass and the oil vessel and the top of the glass and the gauze could not be easily checked. Our collier is carrying his pick, which unlike the more modern socketed one, has the blade fixed to it. It was the usual practice for a collier to own several picks, some of which he would take down the pit with him whilst others were at the pick sharpeners cabin at the pit heap. He paid the pick sharpener for keeping his picks sharp & well tempered and there was an art in this job. During this century, since socketed picks came into use, making it possible to remove the blade easily, it was the practice for a collier to carry several pick blades on a thick wire ring which was much more convenient than having to carry complete picks or manage with a dull blade. This man was at work during the era of the great colliery explosions, when there were daily accidents also from falls of roof and in pit shafts etc. and if he survived all that, he was still condemned to hard labour for 11 or 12 hours a day in hot, dusty conditions in virtual darkness.

Photograph No. 100. Colliery Houses at Ince-in-Makerfield, Wigan in the 1870's.

It is more than likely that there was no piped water supply at this time, hence the rain water butts. Certainly the adjoining townships of Ashton-in-Makerfield, Orrell, Billinge & Pemberton only started to construct reservoirs for this purpose in about 1873-4.

The cottages in the picture are poorly and cheaply built and have been badly maintained and probably never painted since they were built. The numerous coal places are an indication that the miners were in receipt of cheap concessionary coal and although they may have been poor and dirty, they were able to keep warm in winter. A curious thing is the two boys in the foreground carrying their burdens on their heads as they do in the East.
Privies are conspicuous by their absence although they are probably behind the camera and there would not be many of them. The broken down building on the extreme left of the photograph may be one. The position of the chimney stacks and the wide roof span would seem to indicate that these were "back to back" houses, i.e. two rows of houses under one roof each house having only one door.

THE VENTILATION OF COAL MINES & EXPLOSIONS.

The atmosphere of a mine speedily becomes vitiated by the breathing of men (and in former days of horses and the burning of oil lamps) the firing of explosives and by gases, explosive or poisonous, given off from the coal or evolved by gob fires and by the coal dust in the air. It is essential that this foul air should be continuously exhausted from the mine and replaced by fresh air.

The chief gas evolved from the coal is methane, known in the pit as firedamp; an explosive gas. This is sometimes given off in considerable volume as the coal is broken into at the face, whence it may sometimes be heard to issue with a slight hissing sound. Blackdamp is an atmosphere composed of Carbon dioxide and Nitrogen in excess of the normal percentages found in pure air.

Carbon dioxide is produced by the breathing of men and animals and by the oxidation of solids. Where Carbon dioxide has replaced oxygen to the extent that there is only 15% of the latter present drowsiness occurs. Lower percentages of oxygen i.e. more Blackdamp may be fatal.

Carbon monoxide, or Whitedamp, is produced by gob fires, explosives and by explosions of firedamp. It has a poisonous effect on the blood so that even 1% is fatal.

Hydrogen Sulphide or Stinkdamp is another gas met with in coal mines occasionally. Small percentages are injurious to breathe.

All these together with the coal dust are the chief impurities in the air of a coal mine, although methane on account of its abundance and the danger of it exploding is the most to be feared, especially so in former times when coal dust was not adequately dealt with and thus exploded together with the methane.

A dry, dusty and gassy seam is always dangerous and an underground explosion is nearly always a terrible occurrence. Immediately after an explosion the oxygen essential to life has been burnt up to form Carbon dioxide and Carbon monoxide so that those who have escaped death by direct shock or burning, are cut off by asphyxiation or poisoning.

The mechanical effects of an explosion are not only disastrous to the men, but destructive to air doors, air crossings and stoppings. Tubs are overturned, roof supports are blown out, with the result that heavy falls of roof are produced and the ventilating current short circuited or stopped. Shaft fittings and winding gear are often damaged. Thus the usual means of clearing the air are rendered unavailable and access to the scene of the disaster may be for a while impossible.

Photographs Nos. 101 & 102, — show the disastrous effect of an explosion of firedamp when the massive concrete cap was blown off one of the old Abram Colliery Shafts near Albert Colliery. This was said to have been caused by a man dropping a lighted cigarette down the shaft through a hole in the cap.

Photograph No. — 101 shows that the concrete cap was reinforced by steel girders and gives some idea of the tremendous force which must have been present to dislodge such a massive construction.

101

102

In old days some mines were naturally ventilated, especially where shafts were of unequal depths, whilst others were ventilated by firebuckets at the bottom of a chimney connected with the upcast shaft; by water falling down the downcast shaft or by steam jets in the upcast shaft. From the beginning of the 19th century, furnaces at the bottom of the upcast shaft became common. These were quite successful, often circulating relatively large volumes of air and their use continued at some pits in the Wigan area into the present century. Where the air was so charged with firedamp that there was a danger of it exploding at the furnace, it was carried up an inclined 'dumb drift' instead of past the fire and this drift entered the shaft perhaps 50 or 60 ft. above the bottom. The Deep Pit at Rose Bridge Wigan produced with two furnaces 235,000 cubic feet per minute.


103

Photograph No. 103 shows the underground ventilating furnace at Clifton Colliery, Burnley, the last to be used in Lancashire.


104

Photograph No. 104 — is of the chimney at the Wall Hey Furnace Pit at Haigh, Wigan, which was the upcast for the Crawford Pits before the installation of the Dairy Pit fan. Another Haigh furnace pit was the Patchcroft Pit, upcast for Lord Crawford's Arley Colliery.

From the 1860's, ventilating fans were gradually introduced, one of the first and most popular types being the 'Guibal'. These were slow running large diameter fans, that at Pemberton Colliery, Wigan, installed in 1872 being 46ft. in diameter and 15 ft. wide. The large brick casing and part of the chimney of such a fan (made by Walker Bros. of Wigan) at Old Boston Pit, Haydock, near St. Helens, is shown in *Photograph No. 105.* Walker Bros. of Pagefield Ironworks, Wigan, improved the Guibal fan and produced their highly successful 'Indestructible Fan', used for ventilating mines all over the World and incidentally, the Mersey Tunnel, opened in the 1930's. The engine for driving a large fan at West Leigh Colliery is seen in *Photograph No. 106.*

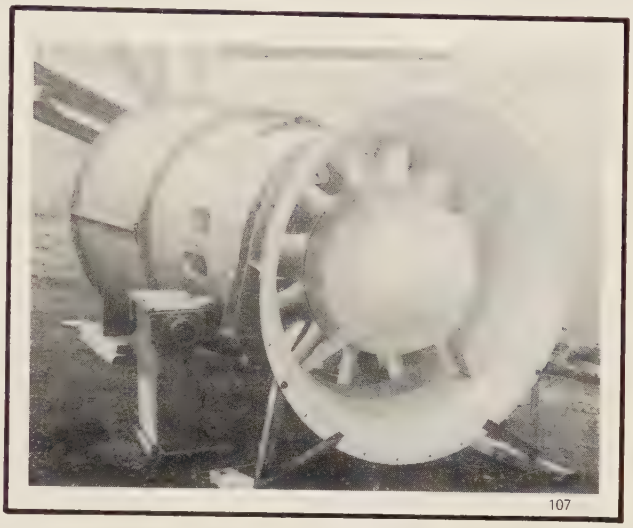
A more modern fan is the axial flow type in *Photograph No.* 107 before installation at Standish Hall Drift Mine, Wigan, in 1950.

105

Photograph No. 105 - The large brick casing and part of the chimney of a fan.

Photograph No. 106 — The engine for driving a large fan at West Leigh Colliery.

Photograph No. 107 — A more modern type of fan - the axial flow type.



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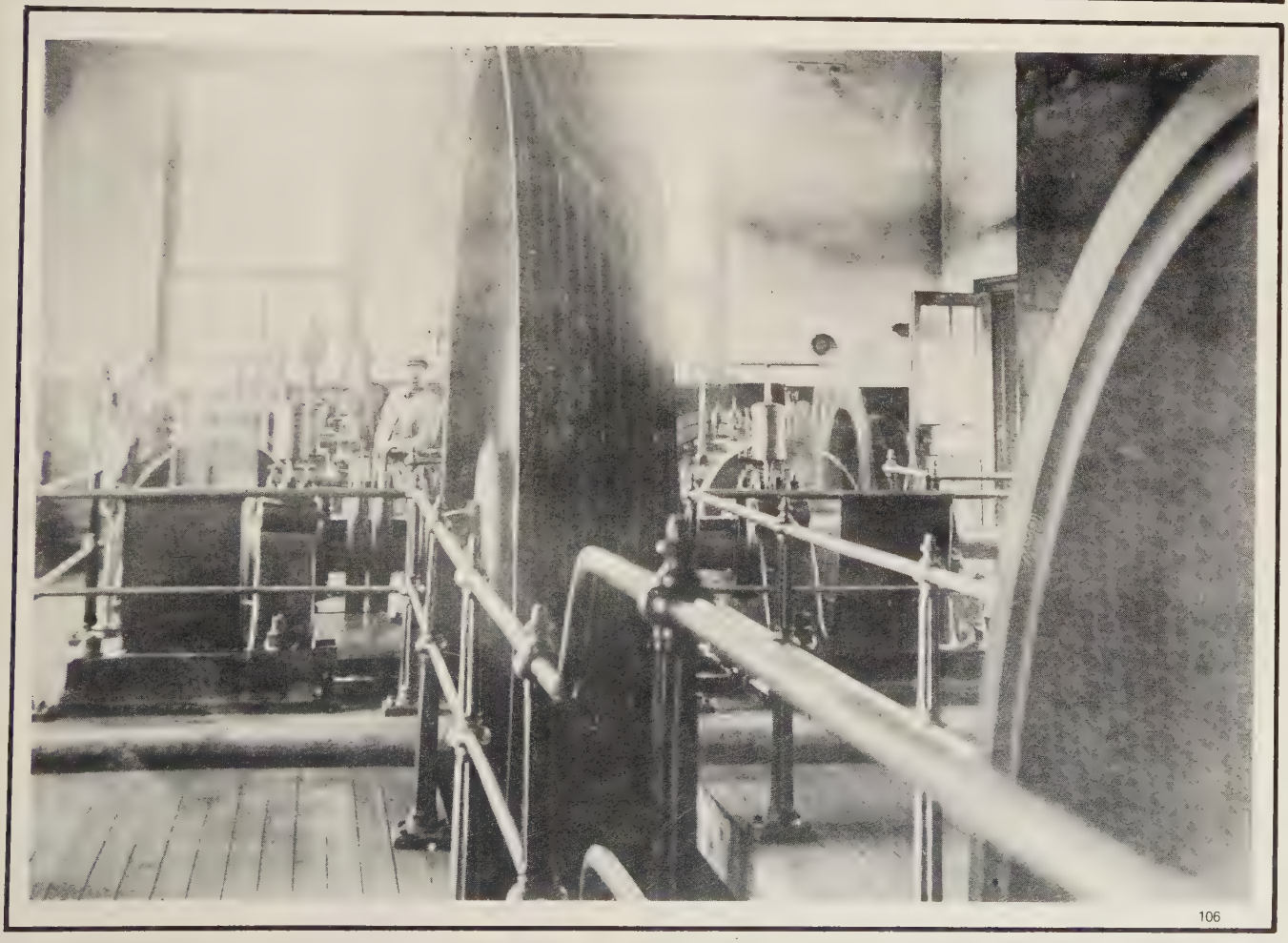


106

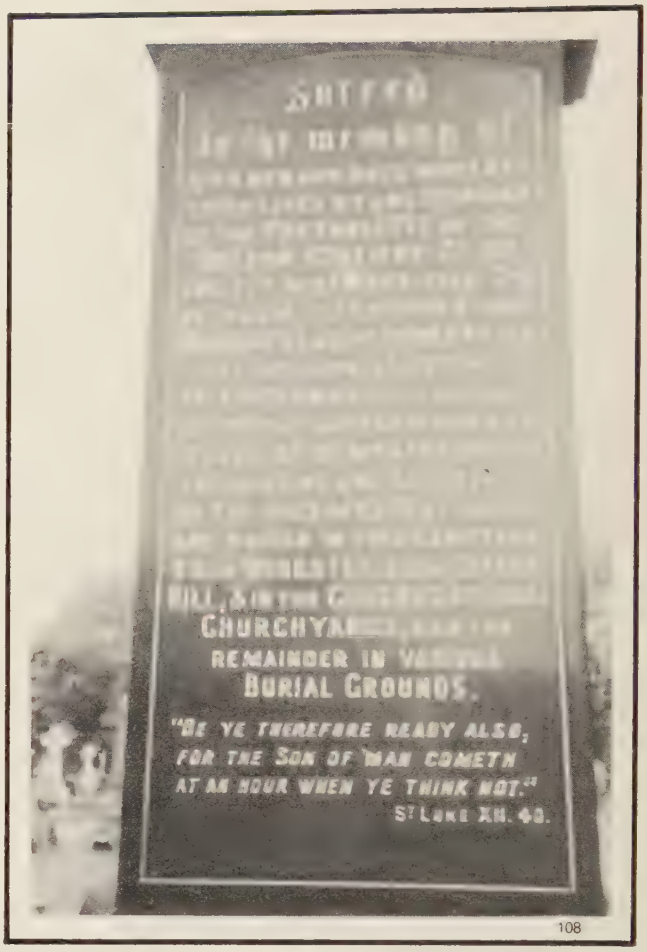
MINE DISASTERS IN LANCASHIRE

Violent death on a large scale was an all too common occurrence in the pits of Lancashire until comparatively recent times. During the fifty seven years between 1853 & 1910, 1329 men & boys were killed in twelve explosions of gas and coal dust involving more than 50 persons, an average of over 110 per explosion. A further 550 men & boys were killed in explosions involving 5 to 50 persons. Many thousands more died violent and agonising deaths from falls of roof and sides, by being run over or crushed on haulage roads and by falling down shafts, but we are only concerned here with explosions:-

The most appalling accident of any kind that ever happened in Lancashire was the explosion of firedamp & coal dust at the Hulton Colliery Company's No. 3 Bank Pit, or Pretoria Pit, on the 21st December, 1910, which caused the loss of 344 lives. Up to that time it was the greatest single colliery accident that had ever occurred in Britain as the nearest in numbers at the Oaks Colliery, Yorkshire, caused the loss of 334 lives on December 12th 1866 although on the following day another explosion caused the deaths of 27 explorers.

The only disaster that eclipsed Hulton and the Oaks was the explosion at Universal Colliery, Senghenydd in Glamorganshire on 14th October 1913, less than three years after Hulton, when 439 men and boys lost their lives. The term men and boys is seen on all colliery accident memorials, boys playing a very important part as haulage hands & pony drivers etc. Seventy eight boys of twenty years of age and under died in the Hulton Colliery disaster:-many of them under seventeen.

Another one hundred and thirty nine were between twenty and thirty years of age, making a total of 217 under thirty.



108

Almost every family for miles around had lost a relative, many of them more than one. The district was not as well populated as it is now, most of the men being employed in the pits, and those of their womenfolk who worked, in the mill. The effect of this terrible disaster on the lives of the people of the whole of the Westhoughton area must have been absolutely devastating.

Photograph No. 108. The Hulton Colliery Explosion memorial and mass grave in Westhoughton Churchyard.

Photograph No. 109. Salvation Army service at Hulton Colliery, December, 1910.


109

Photograph No. 110. The Maypole Pit Disaster, Wigan, 18-8-1908.

The Divisional Inspector of Mines reported that "on the afternoon of the 18th of August, an explosion occurred at the Maypole Pit near Wigan, a great blast followed by volumes of black smoke and dust suddenly issuing from the pit top, followed by volumes of dark smoke and it was at once evident to those on the surface that an appalling calamity had occurred. The manager of the colliery, who had just reached his own door after 10 days holiday, witnessed the explosion and at once realised the grave position of affairs and immediately set to work to plan and carry out an attempt at rescue. A descent was made without loss of time at a neighbouring colliery (Wigan Junction) connected underground with the Maypole Pit and a party of rescuers at once penetrated some distance into the Maypole workings and rescued three men who were uninjured; but advancing further, they were met by afterdamp and from that point explorations were both difficult and dangerous and it was soon evident that a fire had broken out somewhere in the inner workings, the roadways being filled with a mixture of smoke and afterdamp. It was impossible to live in such an atmosphere and although persevering attempts were made to clear it, it resisted all efforts and stood like a wall preventing any advance".

It was discovered later that the explosion had blocked the upcast shaft and this was thought to be the cause of the great loss of life. Efforts to explore the mine were continued but it was clear there would not be any survivors. Seven bodies were recovered and sent up the pit and fourteen others were found in or near their working places but others had been able to go a short distance outwards. Only an hour before the explosion the colliers and drawers had gone up the pit otherwise the loss of life would have been much greater.

At midnight on the third day the ventilation was reversed by another explosion in the vicinity of the fire, the downcast pit becoming the upcast, causing it to be filled with smoke and afterdamp and the explorers in the mine at the time narrowly escaped with their lives. After this the fire developed, clouds of smoke issuing from the pit mouth and putting an end to all attempts to descend. Sixty eight bodies still remained in the mine.

Photograph No. 111. One of the colliery rescue teams at Pemberton Colliery, Wigan, in the 1920's.

The apparatus they are wearing is of the 'Proto' Compressed oxygen type, a development of the Fluess Apparatus. It was manufactured by Siebe-Gorman & Co. Ltd., of London. In the Coal Mines General Regulations of May 1914 & July 1920 it was laid down that collieries should organise and maintain competent rescue brigades, the number of these brigades being dependant on the number of workmen employed underground. If there were less than 100 men it was not necessary for the owner to maintain a rescue brigade, providing he could call on the services of a Central Rescue Station. If he had up to 250 men he was to maintain one brigade, between 250 & 700 men two brigades, 700 to 1000 three brigades & four brigades for over 1000 men. The first central rescue station in Lancashire was established at Howe Bridge near Atherton in 1908. It had hardly been established before its services were called upon to assist in rescue operations at the Maypole Colliery Disaster, Wigan, on August 18th 1908. At that time they had only six men fully trained in this work and they had just begun to experiment with the different types of apparatus then on the market. Due to this, the team arrived at Maypole with various types of apparatus, including 'Proto', 'Draeger' & 'Weg', the latter the invention of Professor Garforth who specialised in the field of Mine Explosions.

By the time of the terrible Pretoria Pit Disaster at Hulton Colliery in 1910 the situation had been rectified, over 200 men having being trained in Rescue work at Howe Bridge Central Rescue Station, which was then using the Proto apparatus. An excellent new Central Rescue Station was built at Boothstown near Manchester in 1932, fully equiped with all the best apparatus then available and this is the one which, fully modernised, now serves the coalfield.

The group in the photograph includes Harry Ashurst, Assistant Manager, seated on left and Bill Walker, Undermanager seated in the middle.

Photograph No. 112. The Pemberton Colliery Rescue team which took part in the Pretoria Pit rescue operations.

Photograph No. 113 – The funeral cortege, passing along Gerard Street, Ashton-in-Makerfield, Nr. Wigan, of some of the twenty seven victims who perished in the explosions at the Garswood Hall Collieries No. 9 Pit at Edge Green, on the 12th November, 1932. The colliery was raising about 800 tons per day from the Ravine and Orrell Four Feet seams. Four hundred and twenty men were employed on three shifts under the charge of eleven deputies, an undermanager and a manager.

There were three districts in the Ravine Seam and one in the Orrell 4ft.

It was in one of the Ravine Districts, No.5 Brow, that the explosions occurred, the first at 2 a.m. and the second half an hour later. After the first explosion, the teenage boys on the haulages serving the district made some very brave attempts to rescue their fellow workers and Sir Henry Walker, the Chief Inspector of Mines, had this to say about them in his report;

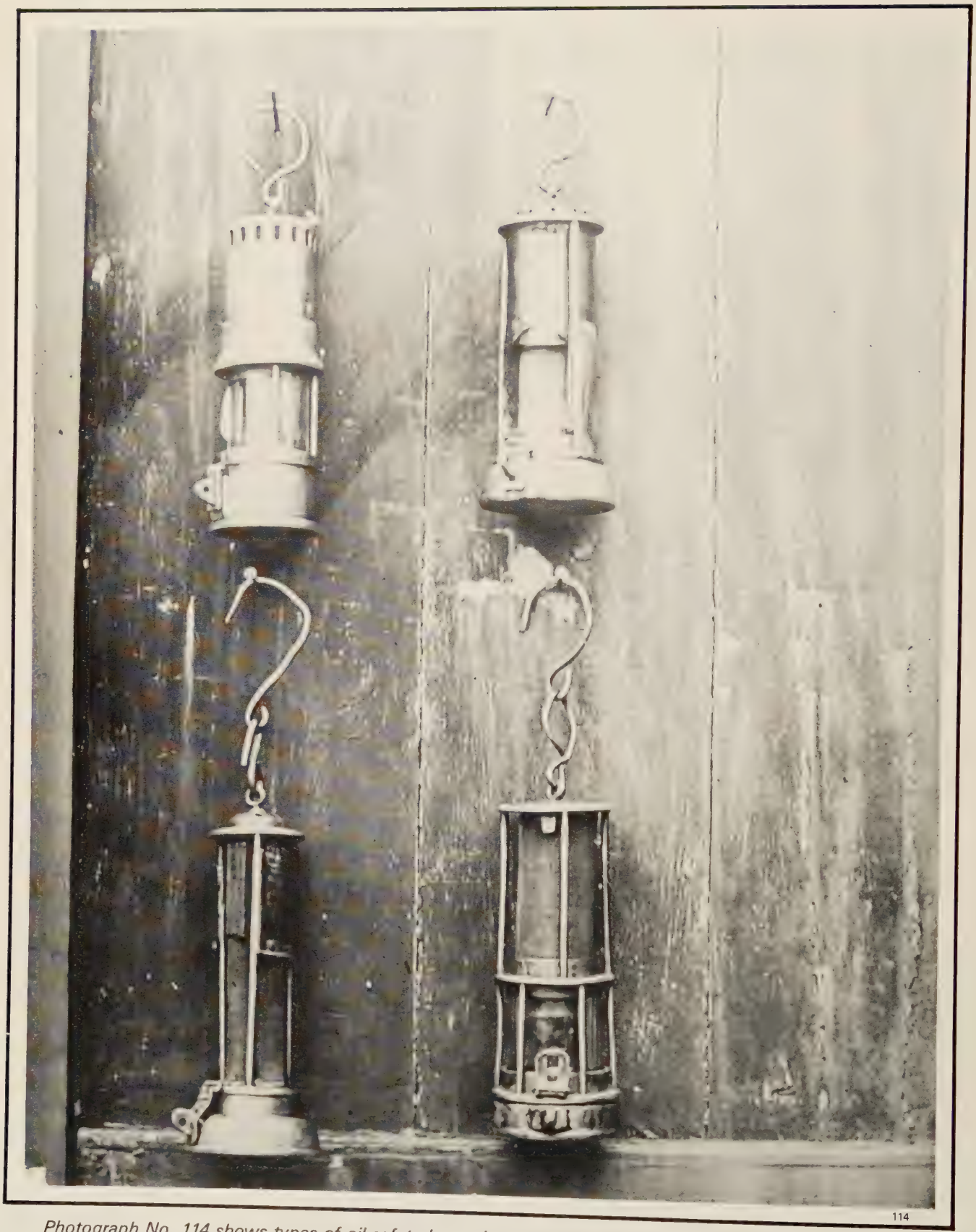
> "I have given the story of the work done by these youths at length because I think they deserve it. They showed that the spirit which imbued their confreres in Yorkshire after the explosion at Bentley Colliery almost a year before, lives on in the pit boys of Lancashire".

After the alarm had been raised, the undermanager, officials and men from the other districts also made some very brave efforts, but Carbon-monoxide in a deceptively clear atmosphere free from methane, made their heads reel and their legs give way and they were forced to retreat and drag themselves out, crawling on the floor, as best they could. Sir Henry Walker, commenting on the evidence of one of the firemen said:-

> "A simple tale; told by one of the many courageous men in the mine that night and one from which several useful lessons are to be learnt".

The Mines Rescue Teams from the Central Rescue Station at Howe Bridge were soon on the scene and they were assisted in their work of recovering the bodies during the following day and night by rescue teams from no less than fourteen neighbouring collieries.

This accident happened only four weeks after nineteen were drowned when the winding engineman at the nearby Bickershaw No. 3 Pit overwound when winding men. The descending cage smashed through the buntons or baulks at the pit bottom and dropped into the water in the shaft sump. Only one man got out alive but did not survive his ordeal for more than a few months.



Photograph No. 114 shows types of oil safety lamps in use at Wigan pits a hundred years ago.

Top Left:- Officials lamp with two gauzes under bonnet over glass. Invented by William Smethurst, manager of Garswood Hall Collieries, Wigan.

Top Right:- Bonneted Davy lamp.

Bottom left:- Original type Davy lamp known by the miners as a "candle in a stocking".

Bottom Right:- Unbonneted Marsaut with two gauzes and glass as used by colliers.

All the above lamps were locked by a lead rivet through the hasps seen in the photograph. These lamps were probably made in Wigan by J. H. Naylor of the Wiend or at Pepper Mill Brass Foundry.

115

RECREATION:—

Photograph No. 115. Horticultural show in Winstanley Park near Wigan in about 1900.

William Burgess underground manager at Pemberton Colliery in top hat at centre, George Ashurst Colliery Cashier fourth from right. George Hampson General Manager's confidential clerk 6th from right.

Photograph No. 116. Abram Colliery Brass Band c1927.

William Haydock the well known conductor is seated in the centre. Major E. Hart General Manager fifth from left, Harry Jackson Colliery Cashier fourth from left, Fred Fogarty Checkweighman, 7th from left. Second from left at the back is Jack Mawdesley prominent cornet player. In 1934 when Abram Colliery closed, the shafts, the Arley Mine and the band were taken over by Bickershaw Colliery.

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117

Photograph No. 117. Col. Henry B. H. Blundell C.B., MP.

Much has been written and said in the past about the "wicked coal owners", but some there were who had the welfare of their workpeople at heart. Such a one was Col. Blundell owner of the Pemberton Collieries. In the 1870's he built the nucleus of the colliery village of Highfield with houses far above the standard of those days. Paved service roads were provided to the rear of the houses and every house had a walled kitchen garden with a pig sty at the far end. He provided a church and schools and until about 1900 paid the teachers' salaries and the stipend of the Curate-in-Charge. A very commodious club, with bowling greens and billiard tables and other facilities, catered for the workmen in their leisure time, as well as a reading room. The Colonel and his nephew Cuthbert who succeeded him also gave a park, public bowling greens, a fine cricket field with a superb pavilion and tennis courts etc.

In the 1930's Cuthbert Blundell gave a very large extension to the Girls School to comply with the Board of Education's requirements for the new "Senior Schools", and also provided a playing field.

Colonel Blundell was Conservative MP for the Ince Division of Lancashire for 18 years. He was educated at Eton and took his B.A. degree at Christ Church, Oxford, in 1854. He went on to Sandhurst and joined the Rifle Brigade; serving in the Crimea. After passing the Staff College he changed to the Grenadier Guards. In 1876 he was appointed Adjutant General of the Home District and on retiring from the army he was made a Companion of the Bath (Military). His wife was a Maid of Honour to Queen Victoria and he built the magnificent Highfield Church in her memory.

Colonel Blundell died in 1906. He was typical of the best of the colliery owners of Lancashire & others that spring to mind are the Fletchers and the Burrows of Atherton, the Darlingtons of Coppull, Knowles of Ince, Evans of Haydock and the Earl of Ellesmere.

Photograph No. 118. Alfred Hewlett.


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The South Lancashire Coalfield attracted and trained many eminent mining engineers.

Alfred Hewlett was typical of the many great mining engineers of the very highest calibre who managed the mines of Lancashire from the early 19th century onwards; one of the earliest being the famous Robert Daglish, manager and engineer at the Orrell Collieries from 1810. The coalfield abounded with difficulties more than most -large volumes of water, gas, steep steams, great depths with attendant heat and faults from a mere nuisance value to fractures with displacements of hundreds of yards. Britains first mining society was formed in Lancashire in 1838 and the country's second mining school at Wigan in 1857.

Alfred Hewlett, son of the Vicar of Astley, served his articles with Mr. Piggot the Earl of Bradford's agent and manager of his collieries near Bolton. He then practised for a short time in Bolton as a mining engineer and land surveryor & in 1853 went to assist his brother-in-law James Darlington in the management of the extensive collieries of the Ince Hall Coal & Cannel Coy, near Wigan and afterwards became the manager there.

In 1860 he was appointed manager of the collieries belonging to the Earl of Crawford and Balcarres at Haigh, Aspull, Blackrod and Upholland and when these collieries were merged with the Kirkless Hall and Standish Collieries, to form the Wigan Coal & Iron Coy., he was appointed principal viewer and managing director. He retained this position until he retired but he also had interests in Blainscough, Welch Whittle and other collieries. He was one of the principal supporters and benefactors of the Wigan Mining School, of which his friend, Cornelius McLeod Percy, was the head.

Members of the Percy family were the engineers and managers of the great iron and steel works of the Wigan Coal & Iron Coy. at Kirkless when Hewlett was managing director.

Alfred Hewlett served as President of the Mining Association of Great Britain and of the South Lancashire and Cheshire Coal Association. He died in 1918.

THE AUTHORS

J. LANE.

The late John Lane O.B.E. started his mining career at Park Lane Collieries, Bryn, near Wigan. Became Manager of Cleworth Hall Colliery, Tyldesley & Long Lane Colliery, Bryn. Joined the Mines Inspectorate, attaining in 1966, the position of H.M. Divisional Inspector of Mines & Quarries for the North West.

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D. ANDERSON.

Served apprenticeship as Mine Surveyor and Mine Manager at Pemberton Collieries, Wigan, at that time owned by the Blundell family and one of the largest collieries in Britain. Worked abroad in gold mines and collieries as surveyor and mine manager. For the past thirty five years director and manager of licenced mines.

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